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## Organic Lawn Care

Homeowners in America currently care for over 30 million acres of lawn. That is an area the size of New York State, and more than all the acreage of corn and soybeans grown in the U.S. combined. A quick calculation of how much fertilizer and pesticide products we pour on these lawns will show the staggering money and volume of petroleum-based synthetic that we put forth for green grass, for keeping up with the Jones, for fewer weeds. FOR WHAT?

The real costs of these products to our environmental health, personnel health, and energy usage involves lots of big numbers and depressing warning signals for how we live. Just a few facts: A USDA study showed that up to 60% of applied lawn fertilizer is lost to leaching through the soil, runoff in rain water, or by vaporizing. Pre-emergent herbicides are often misused because they require proper timing and patience. Synthetic lawn insecticides are effective, but can be persistent in the soil and destroy the soil organisms that help build healthy soil and provide nutrients to the grass plants.

Hence the movement toward a better way of lawn care. Without the use of synthetic, petroleum based fertilizers and pesticides, you can have a nice, green lawn that is healthier for your family, your pets, and the environment. The lawn better withstands drought, and pest attacks, and after the initial investment, greatly reduces the amount of care required.

The drawbacks? Plan on two to three years to achieve a healthier lawn, you will have to learn to tolerate a few weeds, and learn some new tricks. Actually, not new, your grandparents probably would laugh to see us relearning these common sense gardening techniques with a fancy new name.

The following steps form a complete program for organic lawn care for an existing lawn. Not everyone will have the drive to do them all. But by following even three or four steps, you can go a long way to returning natural fertility to your soil, and achieving a healthier lawn that you will not have to worry about walking on!

### Getting Started

Most lawns in Ohio are either Kentucky bluegrass or a type of fescue, or a mix of both. Ideally, the lawn is in full sun and grows on a six inch layer of topsoil. Yea, right. Realistically, your lawn has two or three inches of good soil, then construction fill or our good old Columbus clay. And, the soil is probably compacted pretty bad in spots, or has poor drainage in spot also. So, the first step is:

Assess soil type, and identify areas of poor drainage. If you have low spots in the lawn, now is the time to re-grade these areas for proper water drainage. Then take a shovel and dig a hole one foot deep in a representative spot in the lawn. How deep do the grass roots go? What color is the soil? Is the soil loose and crumbly or dense and clumpy? Dark brown or tan and dray mottled? At what depth does the soil color change? These questions will help give you and idea of your soil type.

ORGANIC LAWN CARE



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# ORGANIC LAWN CARE

Ideally, the soil should be a nice dark brown to a depth of six inches to a foot. It should feel crumbly and loose, and the grass roots should be growing down to 5 or 6 inches in depth.

- 2) Take a plug of soil from several areas in your lawn and mix them up. Send these out for a soil test. Your Extension service or Oakland nursery associate can help find a reputable soil testing lab. Since grass needs a certain amount of nutrients at specific proportions to grow properly, a soil test is very important to use as a starting point in your fertilizer program.
- 3) Mow your lawn low, to one or two inches. Then rake the whole lawn vigorously or used a de-thatcher to remove the layer of dead grass lying on top of soil.
- 4) Aerate the lawn. Renting one is most economical.
- 5) Add a half inch layer of finely ground compost when starting the process. Thereafter, add the compost in spring. This compost is not just rotting organic matter, but the most important element in building a natural lawn. This is because the goal is to not feed the grass, but nurture the life in the soil. The soil is packed full of microorganisms that break down the nutrients and make them available to the plants. One of your jobs will be to find a good source of good compost. Good bulk compost should be sweet smelling, cool to the touch and finely textured. At this point your soil test may recommend additional amendments, such as lime, phosphorus or potassium.
- 6) Add grass seed or sod to re-graded or repaired areas.
- 7) Water seeded areas daily, other areas infrequently but deeply if needed.
- 8) Apply a compost tea three times during the season to add additional microorganisms to the soil. See end of article on making compost tea.
- 9) Apply corn gluten in the spring as a pre-emergent weed control and, since it is a good source of nitrogen for the grass, it will also serve as fertilizer.
- 10) Overseed in spring and fall the first two years and then in fall of each year. This thickens the lawn and chokes out weeds in the lawn.
- 11) Mow high, removing no more than one third of the grass length. Mowing the lawn short severely injures the grass plant and opens the emerging weeds up to the sun. Better to keep the lawn cut high and choke out the weeds.

## WEEDS

Growing a natural lawn means putting up with the presence of some weeds. This does not mean the lawn will look like an abandoned lot. Your organically cared for lawn will look every bit as good as the lawn grown with synthetic chemicals, but will have a few weed type plants in it. Once the soil in your yard starts to come alive with microorganisms again and develops a rich soil, the grass will choke out many of your weed problems. But till then,



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# ORGANIC LAWN CARE

a combination of several methods will have to be used to control unwanted weeds. Many times, observing the kinds of weeds present will give you clues to underlying soil problems. Crab grass grows on compacted soils- keep cars off the lawn. Creeping

Charlie grows in poorly drained soils, and dandelions grow in soils short on calcium. Correcting the soil goes a long way to getting rid of the weed.

Other options for weed control are non-selective sprays with vinegar or natural oil liquids. Mechanical tools can be used to remove them by hand. Flaming, or using heat through a special flaming tool to spot kill weeds. Corn gluten is the only product available to use as a pre-emergent in spring and fall to control weed seeds as they germinate.

## PEST CONTROL

There are several products for control of insect and disease pest in lawns, and more are available every year. Consult your Oakland nursery person on the latest products. Nematodes are very small insects that parasitize a variety of lawn pests. Most commonly applied as a spray, the nematodes colonize the soil and can provide good control for grubs, sod webworms, and mole crickets. Boric acid controls black ants, as does diatomaceous earth. Dollar spot fungus can be controlled by adding a nitrogen source and just repairing the spot. Brown patch fungus is controlled by reducing nitrogen. Most other fungal diseases are effectively controlled by just reducing watering. Dog spot (urine spots) can be controlled with a dietary Yucca plant supplement given to dogs. It is interesting to note that many pest problems go away in a healthy lawn once organic methods are in place for a number of years.

## A FEW ADDITIONAL POINTS

As mentioned in the beginning of this article, plan on keeping the initial stages of this plan to organic lawn care going for two years. You should see some good results the second year and excellent results the third year. If you have shallow, horrible soil, a lot of shade and poor follow through plan on a longer time frame to reach good results. The good thing is you can start reducing the toxic chemical going into your lawn right now, and starting living a healthier life in a healthier world.

There are many new organic products coming out every year, including organic fertilizers, many including these beneficial microorganisms that help build a great soil. One of the great natural fertilizers known forever by old-timers but just now being rediscovered is white clover. You know, a healthy lawn only needs about 4 lbs of actual nitrogen per 1000 square feet every year for growth. If your lawn has only 5% white clover in it, they will supply 2 pounds of that by fixing nitrogen from the air for the plants\*. Plus they stay green when grass is not in a drought and helps the soil by sending roots through tougher layers of soil. Why not?

## Sewage Sludge (Biosolids)

Sold bagged in garden centers as Milorganite™, or locally as Comtil™. These products are the composted by-products of wastewater treatment. These biosolids are mixed with wood chips and yard waste. After high temperature composting, these materials are screened to



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# ORGANIC LAWN CARE

provide a uniform product. The city of Columbus claims this product is safe for vegetable gardens. While these products are tested for metals and contaminants, and have been found to be below accepted standards for them, there have been concerns using these human manure products. Essentially they are made from everything that people put down the drain, good or bad. Check out the websites for these products yourself and decide whether it is right for you.

**Compost tea recipe:** This magic elixir is packed full of microorganisms to help digest the organic matter you applied in compost, and colonize your soil layer to return life to the soil. Start with a source of rich compost. Worm compost is very good. Fill a sock or nylon with about 12" of compost, and immerse into a five gallon bucket of water. Supply a source of air via an air pump. A large aquarium pump works or they even sell dedicated compost tea pumps now. Soak for 4 days to a week. Then apply at the rate of one quart to 1000 square feet to your lawn. Do this three times a year. This is also a great amendment for vegetable gardens, roses, shrub and flower beds. Additional information is very available on the internet.

**Mycorrhizae:** A real buzz word in organic gardening these days. This fungal organism forms a symbiotic relationship with plant roots to increase growth and fend off pest problems. The key to using mycorrhizae effectively is to get them down to the rooting area of the plant. For lawns, that means core aeration before application of mycorrhizae products so the organisms can fall into the holes where the grass roots are. Do not apply during hot and dry weather.

### Other Organic Fertilizer Sources:

Here are some other organic products for use on lawn and garden, and the pros and cons of each.

**Alfalfa meal:** Good source of nitrogen 3%. Somewhat acidic.

**Cottonseed Meal:** 7% nitrogen, acidic in soil.

**Corn Gluten:** Weed suppressant and big source of nitrogen, 10%.

**Seaweed:** A complete nutritional source and cytokine for plant cell division boost. 1% nitrogen 5% potassium.

**Wood ash:** Good source of phosphorus and potassium and lime. Intensely alkaline and will dramatically raise pH. 18# wood ash equals 6# lime. Mix with coffee grounds to neutralize pH.

**Blood Meal:** Animal derived. Incorporate into soil for quick green up. 15% Nitrogen. 3%P. Do not top dress with this product.

**Bone Meal:** Animal derived. 22% Phosphorus and 22% Calcium. Expensive in large quantities. Good for root growth. Do not top dress with this material.

**Feather Meal:** Animal derived. 8-15% nitrogen. Slow to break down.



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**Fish by-products:** Nutrients quickly available to plants. 8% nitrogen, 6% phosphorus.

**Coffee Grounds:** Why not? Everyone has them. Make good compost. Only slightly acidic after used.

### Resources

**Organic Lawn Care Manual**, by Paul Tukey Storey Publishing 2007.

**Natural Organic Lawn Care for Ohio**, Ohio State Univ. Extension Fact Sheet HTG-4031-04, Martin, Eickholt, and Dole. 2007.

**Secrets to Great Soil** by Elizabeth P. Stell Storey Publishing 1998.

**Safe and Easy Lawn Care, a Taylor Guide**, Barbara Ellis, Editor, Houghton Mifflin 1997.

**Rodale Organic Gardening Basics: Lawns**, Rodale Books 2000.

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