

Advanced

Lawn Maintenance or Giving Your Lawn a Facelift

Many Americans accept the idea that we must have lawns of thick, green, healthy grass with few weeds. We spend a lot of time, money, and energy trying to achieve that perfect lawn. All too often, we direct our efforts toward trying to discourage the plants and insects we don't want by using chemical weed killers called herbicides. Herbicides are a type of pesticide; other types include insecticides and fungicides. Pesticides are poisonous. They can cause sickness in adults, children, and pets, and they can end up in our drinking water.

The easier and healthier way to maintain a green lawn is to encourage the plants we do want. By optimizing the conditions that encourage grass growth, it is possible to have a healthy, green lawn without using chemicals. The Green Thumb Project promotes alternative lawn management practices that eliminate the use of pesticides.

Basic lawn care practices that improve the health of your lawn without using pesticides include:

- **Mow high**

Maintain a grass height of 3". Allowing the grass to grow tall encourages the roots to go deep, resulting in healthier grass that can withstand dry periods and other stress. This is the most important thing you can do to improve the health of your lawn.

- **Water sparingly**

Here in Duluth we usually get enough rain during the summer so that it's not necessary to water the lawn. In addition, grasses that survive the best in Minnesota naturally slow down their growth during the hot, dry part of the summer. During this dormant period they look brown and dead, but they're just resting.

- **Don't rake**

Fertilize by leaving grass clippings on the lawn. If you use a chemical fertilizer, use a slow-release variety, use only what is needed, and apply it in the fall.

Remember that grass can't grow successfully everywhere. Just like every other plant, it needs certain physical conditions to survive. The most important conditions for successful grass growth include:



- **Good soil**

Grass grows best in 4"-6" of well-drained topsoil that includes plenty of organic matter. Soil pH should be between 6.5 and 7.0.

- **Plenty of sun**

Most varieties of grass need an average of six hours of full sun everyday. If your yard receives less than 6 hours of full sun each day, be sure to plant shade-tolerant grass varieties. If your yard is very shady, consider planting other types of ground cover.

- **Adequate moisture**

Maintaining your grass at least 3" high will help it to survive dry periods without extra watering. If you do water your lawn,

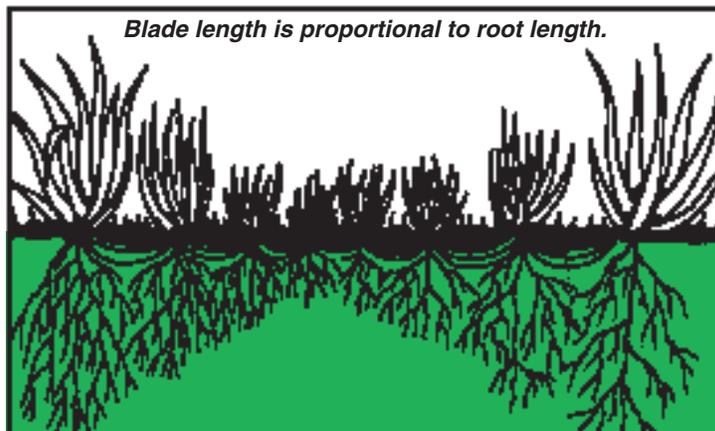
- Water only if it hasn't rained for 7 days.
- Water early in the morning. (Between 6 and 10 a.m.)
- Thoroughly soak the ground, giving it about 1" of water.

To Give Your Existing Lawn a Facelift

Improve the Soil

Grass grows best in 4"-6" of well-drained soil with plenty of organic material. If your soil is heavy clay or loose sand, add 1/2" of organic matter in the form of compost. Use a mechanical spreader to distribute the manure evenly over the lawn, then water thoroughly. In addition to adding organic material, this will give earthworms and microorganisms a chance to loosen the soil.

Have the pH of your soil tested. The pH is a measure of the acidity of the soil. Grass does best in soil with a pH of 6.5 to 7.0, which is slightly acidic. If the pH of your soil is lower than 6.5, add agricultural lime or ground limestone to raise the pH. If pH is above 7.0, add sulfur to lower the pH. Contact the Minnesota Extension Service (218-726-7512) for help in determining how much lime or sulfur to add.



Encourage New Growth

Overseeding (sowing grass seed on top of existing lawn) can be helpful for revitalizing your lawn. It is a good way to fill in thin spots and a good way to introduce grass varieties that are appropriate for your area.

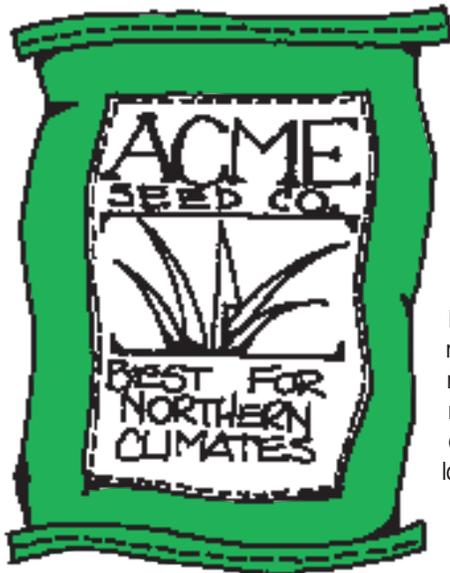
Use a "northern mixture" of cool season varieties of Kentucky bluegrass, perennial rye grass, and red fescue. In the fall, use a spreader to distribute the grass seed mixture over the entire lawn. Use about 4-6 pounds of seed per 1000 square feet. Be sure to keep the grass seed evenly moist until it germinates and seedlings are about 1" tall. If the seed dries out, germination success will be substantially lowered. You may need to overseed more than once before you see a significant change in composition.

Choose the Right Varieties

To have a healthy lawn, you need to plant grass varieties that will succeed in the conditions found in your lawn. There are many varieties of grasses available today to help you do this. For northern Minnesota's cool climate and short summers, a mixture of Kentucky bluegrass, perennial rye, and red fescue or tall fescue succeeds the best. You can buy these premixed, usually labeled "northern mixture." Read the label carefully, and look for a good quality mixture that has no more

than 1% weed seed and no more than 1% "unknown" seed.

If your existing lawn is more than 25 years old, it probably consists of common Kentucky bluegrass varieties and some fescues. If your lawn was sodded, it is probably composed of improved Kentucky bluegrasses, in a mixture of high maintenance and lower maintenance varieties. Consider overseeding to introduce lower maintenance varieties and cultivars.



Fertilize to Replace Missing Nutrients

Many people fertilize their lawn more often than necessary. The purpose of fertilizing is to compensate for nutrient deficiencies in the soil. If your soil is not deficient in nutrients, there is no need to add fertilizer. To determine whether your lawn needs fertilizer, have your soil tested. The nutrients that are essential for a healthy lawn include nitrogen (N), phosphorus (P), and potassium (K).

For lower maintenance lawns, grass clippings can provide most of the nutrients your lawn needs. Nitrogen, which is the nutrient required in the largest amounts by the grass, is abundant in grass clippings. Grass clippings are 90% water, and they decompose in a week or two. Just by mowing regularly and leaving the clippings on the lawn, your adding nitrogen to the soil continuously.

Nitrogen (N) encourages growth of green parts. Lack of N causes slow growth, yellow leaves, and thin spots. Too much N causes excessive leaf growth, reduced root growth, low food reserves, and increased susceptibility to environmental stresses. The best source of N for your lawn is grass clippings.

Phosphorus (P) is essential for seeding growth and root development. Lack of P causes reduced growth, dark-green to reddish leaf color, narrow leaf blades, and wilting. Organic sources of P include manure, compost, grass clippings, and tree leaves.

Potassium (K) is necessary for the development of strong stems and disease resistant. Lack of K causes slow growth, weak stalks, and increases susceptibility to environmental stress and disease. Wood ashes contain K, but they also raise the soil pH, so use sparingly.

If you do use fertilizer, don't apply it in the spring. Grass plants put most of their energy into producing flowering stems in the spring. Adding fertilizer that is mostly nitrogen simply stimulates even more stem growth. It does little to encourage root growth, which is essential for the plants to survive during the hot, dry parts of the summer. Fertilizing in the spring also stimulates the growth of weeds.

If you fertilize, choose a slow release variety, and apply it in the fall using a spreader. Applying fertilizer in the fall increases the likelihood that it will be used for root growth, because that is the plant's main fall activity. Having good, strong roots is the best way for the grass plant to stimulate and support vigorous leaf growth in the spring and to survive summer dry periods.

In general, an N-P-K ratio of 3-1-2 is appropriate for a healthy lawn. If the soil test indicates that some of these nutrients are lacking, fertilizer should be added to correct the specific deficiencies. Call the Minnesota Extension Service (218-726-7512) for help with interpreting the results of your soil test. Once you have improved the health of your lawn, a soil test is probably only necessary every three years.

To Have Your Soil Tested:

- Call the Minnesota Extension Service at 218-726-7512.
- Tell them you would like to have your soil tested
- They will mail you a form to fill out and bag for the soil sample.
- You collect the soil sample and mail it to St. Paul along with the form.
- The results are mailed back to you in about 10 days.
- The Extension Service also gets a copy of the results so they can help you interpret them.
- The cost of a regular soil test is \$7.00.

Aerate to Reduce Soil Compaction

Soil compaction is a common problem with heavy clay soils. Compacted soil prevents air, water, and nutrients from getting down to the roots of the grass. Indicators of compacted soil include thin grass and plentiful weeds.

Aerating your lawn will reduce soil compaction problems. By increasing water and nutrient penetration, aeration stimulates healthy root development.

Use a soil aerator, a machine that cuts plugs out of the soil and drops them on the lawn to decompose.



Aerated Soil

Aerating just once will not make a significant difference to the soil. To be most effective, you will need to aerate 2-3 times at 2-3 week intervals. Start with the first aeration during the third week in July, so that the last one is done in September.

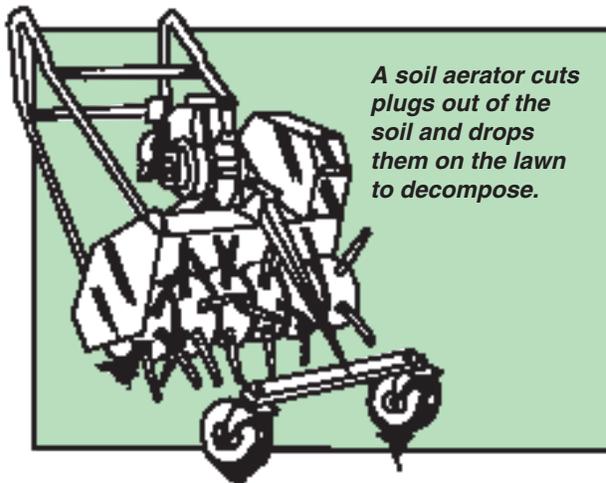
After the first aeration, topdress by spreading a thin layer of compost over the entire lawn. Then overseed by spreading a "northern mixture" of grass seed using about 4-6 pounds of seed per 1000 square feet. Keep the grass seed evenly moist until it sprouts and is about 1" tall.

Aerators can be rented at most equipment rental stores, and some lawn care services will do it for you.

Be Flexible

Keep in mind that there is a point of no return. If your existing lawn has more than 50% weeds, it is probably better to till it up and start over. Be sure to choose grass varieties that will thrive in the conditions in your yard.

If grass won't do well in some areas of your lawn, consider planting other types of ground cover. Some shade-tolerant ground covers include hosta lilies, ferns, periwinkle, pachysandra, lungwort, ajuga, and barren strawberry.



A soil aerator cuts plugs out of the soil and drops them on the lawn to decompose.

LOOK FOR HELPFUL RESOURCES:

Breaking the Pesticide Habit: Alternatives to 12 Hazardous Pesticides,

by Terry Gips, International Organization of Consumers Unions, 1990

Common-Sense Pest Control,

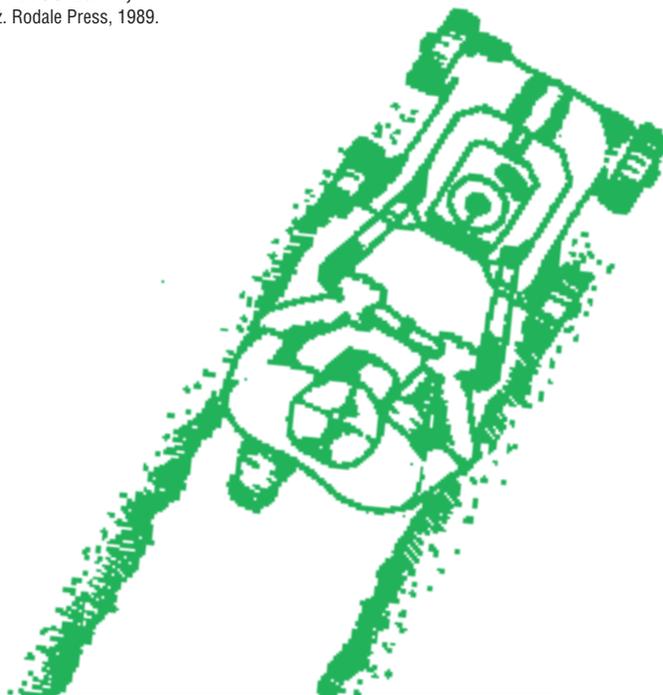
by William Olkowski, Sheila Daar, and Helga Olkowski. The Taunton Press, 1991.

The Handbook of Successful Ecological Lawn Care,

by Paul Sachs, EP Press, Newbury, VT.

The Chemical-Free Lawn,

By Warren Schultz. Rodale Press, 1989.



The Green Thumb Philosophy:

A lawn is a community made up of thousands of individual plants. Each plant in the community competes for the resources it needs-sunlight, water, and nutrients.

The easiest way to maintain a healthy lawn is to optimize the conditions that favor grass growth. That way the grass can out-compete the weeds, and you'll have a green lawn without using pesticides.

The Green Thumb Project is committed to zero lawn pesticide use in the Great Lakes Basin.



The Green Thumb Project

The Green Thumb Project is sponsored by the Western Lake Superior Sanitary District Zero Discharge Project
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