

Lawns



The Vermont and New York Master Gardener Programs, supported by the University of Vermont and Cornell Extension and Lake Champlain Sea Grant, support the objectives of the Lake Champlain Management Plan and Basin Program. This factsheet is intended to help prevent or reduce pollution coming from residences within the Lake Champlain Basin.



If you have a yard, you probably have a lawn

Most lawns do not have to be meticulously managed to be healthy and look good. Selecting the right species and varieties, fertilizing one to three times per year, proper mowing and thatch management, and timely summer watering contribute to keeping the lawn healthy.

Some gardeners, in an attempt to achieve a perfect lawn, may use unnecessary or excessive amounts of fertilizers, water, or pesticides. Over-fertilization is a waste of money and may pose a hazard to the environment. Many of the newer grass varieties retain good green color with reduced amounts of fertilizer and, in many cases, less water.

A healthy, dense lawn will help reduce weed invasion and is the best defense against pesticide and fertilizer runoff into the streams and lakes.

The **lake-friendly gardening** approach to lawns is to use insect-, disease-, and drought-tolerant grasses that require fewer chemicals, thereby reducing the risk of environmental damage.

The basic lawn-care principles include the following:

- Manage lawns properly to minimize the need for pesticides.
- Avoid excessive use of fertilizer.
- Use slow-release fertilizers.
- Follow the pesticide label instructions and precautions.
- Consider low-care alternatives to turfgrass, such as ground covers, herbs, meadows, or paths.

- Evaluate lawn priorities: “How important is a totally weed-free lawn and what price am I willing to pay for it?”
- Use grasses with known tolerance to insects, disease, low fertility, and drought.

Examples of drought-tolerant grasses include Kentucky bluegrasses (Bristol and Challenger) and perennial ryegrasses (All Star, Pennfine, and Premier). Some Kentucky Blues that tolerate poor fertility include Fylking, Merit, and Ram 1. Fine fescues also perform well under low-maintenance conditions.

Some perennial ryegrasses contain beneficial fungi (endophytic fungi) that render these varieties resistant to certain turf insects such as chinch bugs and sod worms.

For a complete list of grasses and their tolerances to insects, diseases, drought, and various other conditions, check with your local Master Gardener Program or with your local seed dealer.

Factors to consider for a healthy lawn

Establishment

Planting recommended species and varieties for your area will go a long way toward preventing problems. A good blend for low-maintenance lawns includes: (a) Sunny location: 50% Kentucky Bluegrass, 25% fine fescue, and 25% perennial rye, or (b) Shady location: 50% fine fescue and 50% shade tolerant variety of Kentucky Bluegrass.

Fertility

Maintain the proper level of soil fertility and avoid over-fertilization by following soil test recommendations. It is best to use slow-release types of nitrogen. Do not apply more than 1 pound of actual nitrogen per 1,000 square feet at one time. To determine what 1 pound of actual nitrogen is, divide the first number on the fertilizer bag into 100. The result is the amount (in pounds) you should take out of the bag and apply over 1,000 square feet of lawn. When you fertilize is critical. Use only what you need, and avoid spring applications. Fertilizing a healthy lawn in spring increases top growth at the expense of root growth and makes it susceptible to insects and diseases. A single application in the fall (August-October) is sufficient for most lawns. Lawns that experienced winterkill or were not fertilized last fall may benefit from a light nitrogen application when the ground thaws in spring.

Amount of fertilizer to use

(each application on established lawns)

% actual nitrogen (First number on label)	Pounds to apply per 1,000 sq. ft.
5	20
8	12½
10	10
20	5
30	2½

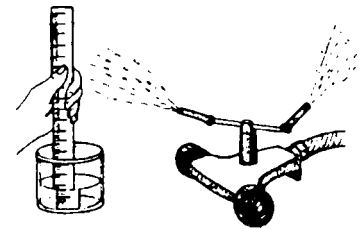
Example:

Using a 10-6-4 fertilizer, you will need to apply 10 lbs. of it per 100 sq. ft.

Water

Most lawns require 1 to 1½ inches of water per week, either in the form of irrigation or natural rainfall. Some factors influencing the amount of water needed are grass and soil type, amount of rainfall, relative humidity, and wind speed. Deep,

infrequent watering is much better than daily, shallow watering, except in the case of a newly established planting.

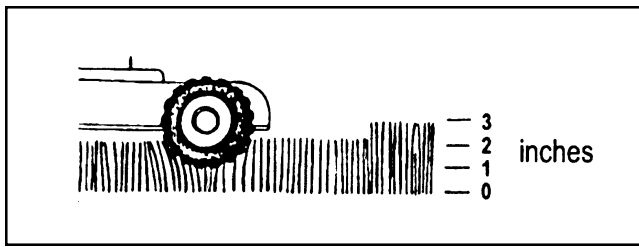


Soil pH

Have a soil pH test done to determine if pH should be corrected. Proper pH, 6.5 to 7.0, can enhance the ability of grass to take up valuable fertilizer, tolerate drought conditions, and resist diseases. Limestone or sulfur (to raise or lower pH as needed) can be applied at any time of the year when the ground is not frozen, preferably in fall. Changing the pH takes time—perhaps more than one season—and testing (along with specific recommendations) is readily available at the UVM Agricultural and Environmental Testing Laboratory on the UVM campus (802-656-3030) and at most Cornell Cooperative Extension offices. Test kits are available from the Master Gardener Program or your local Extension office.

Mowing

Mow lawn throughout the growing season at the recommended height for the species of turfgrass growing, selecting the tallest acceptable mowing height to shade weeds and retain soil moisture. For most lawns, mow between 2 and 3 inches. Mowing frequency is determined by the temperature and the amounts of water and fertilizer applied to the lawn. The more fertilizer applied, the more frequently the lawn will have to be mowed.



It is best not to remove more than one-third of the grass plant at any one time. Clippings can be left where they fall if they are less than one inch in length. This will reduce the amount of fertilizer needed by 25%, because turfgrass clippings contain nutrients that are released back to the soil. If clippings are too long, add them to the compost pile. Mower blades should be sharp because dull blades fray grass tips, giving the lawn a whitish-brown appearance.

Soil compaction

Some areas in our region have clay soil or soil that has been poorly managed or compacted, thus creating a hardened, poorly aerated and drained soil. Some homeowners aerate this type of soil (in spring or fall), to allow oxygen and water to get to the grass roots. If the compacted soil layer is more than 3 to 4 inches thick, aeration is of little value because most aerifiers do not penetrate below 4 inches. Even better than aeration techniques is changing the soil structure by adding organic matter, whether compost, manure, or other shredded material. Core-cultivate first, then spread 1 to 2 inches of compost over the entire lawn. This improves the oxygen-holding and water-retention ability of the soil and attracts earthworms, which aerate and fertilize.

Thatch

Thatch is the dense mat of tangled roots and stems—just above soil level—that forms when grass roots cannot penetrate the soil. This happens when the lawn is over-fertilized and grass roots do not penetrate deep into the soil in search of nutrients. Heavy thatch restricts water movement into soil. Some species—such as the fine fescues and Kentucky bluegrasses—produce thatch, while others—such as tall fescues and perennial ryegrasses—do not.

Thatch can be prevented by healthy lawn practices, including fertilizing properly, using slow nitrogen-releasing or organic fertilizers, and improving soil with organic material (to attract earthworms, which chew up thatch). De-thatching is recommended for lawns with $\frac{1}{2}$ inch or more of thatch and should be done in the fall. It is wise to use a de-thatching machine with fixed blades rather than a machine with blades that nip back and forth because the latter will not reduce the underlying thatch layer and can damage the lawn. To deal with

thatch, soil cores can be broken and spread on the lawn. If thatch is over $1\frac{1}{2}$ inches thick, total renovation is recommended.

Insect, disease, and weed control

The best tool for pest management is to plant grass varieties that tolerate the region's growing conditions and have the greatest resistance to insects and diseases. If you have a problem, take time to accurately identify the problem, potential damage, and best solution. Avoid applying pesticides according to predetermined calendar schedules, unless you have the problem each year and a pesticide application is the only means of control (such as for turf grubs). When treatments are necessary, they should be chosen and timed to be the most effective in dealing with the specific pest and the least disruptive to natural controls.

Remember:

- A dense, healthy lawn is the best defense against weed invasion.
- There are turfgrass varieties available to decrease your lawn care requirements.
- Consider alternatives to lawn in some areas of the yard. It will mean less work, a more interesting yard, and a cleaner lake.

Master Gardener Program

University of Vermont Extension: (800) 639-2230; pss.uvm.edu/mg/mg/


Burlington area: (802) 656-5421

Cornell Cooperative Extension: Clinton County: (518) 561-7450; Essex County: (518) 962-4810



Adapted for local use from *Lake Champlain Gardening Fact Sheets*, produced by Cornell Cooperative Extension with partial funding from the Lake Champlain Basin Program. *Lake-friendly Gardening* factsheets prepared and adapted by Nancy Hulett and the UVM Extension Master Gardeners; Jurij Homziak, Vermont Coordinator for Lake Champlain Sea Grant; Amy D. Ivy, Cornell Extension Educator; and Charles Howard, Cornell Master Gardener. Artwork by Susan Stone. Editing and design by Communication and Technology Resources, University of Vermont Extension.

Visit UVM Extension on the World Wide Web at ctr.uvm.edu/ext/

 Printed on recycled paper

FS 174:12

Revised May 2004

\$0.50

Issued in furtherance of Cooperative Extension Work Acts of May 8 and June 30, 1914, in cooperation with the United States Department of Agriculture. UVM Extension and U.S. Department of Agriculture, cooperating, offer education and employment to everyone without regard to race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or familial status.

4C-UGP-2/01