

Renovating Your Lawn

James A. Murphy, Ph.D., Extension Specialist in Turfgrass Management

Lawn areas which become unattractive and disappointing in performance generally contain a sparse and an unhealthy stand of lawn grasses. Also, an infestation of weeds is characteristic of these areas. Such conditions may result from one or more factors, such as: 1) Improper soil drainage, 2) Soil compaction, 3) Excessive shade, 4) Improper lawn grass for the location and/or use, 5) Soil pH - insufficient or excessive lime, 6) Improper fertilization - inadequate or excessive, 7) Chemical injury, 8) Mowing too closely, 9) Prolonged soil moisture stress - particularly in hot weather, 10) Improper watering techniques, 11) Excessive thatch accumulation, 12) Insect activity, 13) Disease damage, 14) Intensive use, and 15) Vandalism.

When the lawn area has adequate soil drainage and a relatively smooth contour and/or grade, renovation can correct unfavorable conditions, such as: 1) Sparse and uneven stand of desirable lawn grasses, 2) Infestation of undesirable broadleaf and grassy weeds, 3) Improper soil pH, 4) Low fertility, 5) Minor discrepancies in grade, 6) Soil surface compaction, 7) Excessive thatch accumulation, and 8) General neglect.

When considering improvement of a lawn area, specific renovation procedures are determined by:

1. Identifying the factor or factors which contributed to a failure of the lawn. If corrective steps are not taken, the net result may be an exercise in futility.
2. Evaluating the condition of the lawn in question to determine the most effective procedure.

Specific steps for renovating should be based on the condition of the lawn and problems needing attention. Four major categories of renovation are:

- A. More than 30 percent desirable lawn grasses present.
- B. Less than 30 percent desirable lawn grasses present and less than 1-inch of thatch.

- C. Less than 30 percent desirable lawn grasses present and more than 1-inch of thatch.
- D. Difficult to control undesirable perennial grasses infest the lawn.

Specific steps are outlined below.

- A. **More than 30 percent** desirable lawn grasses are present:

1. Submit a representative sample of soil for determination of soil pH and nutrient status.
2. Apply an herbicide if necessary to control any broadleaf weeds, based upon the specific weed problem. 2,4-D alone is effective with dandelions, buckhorn and broadleaf plantains, and annual chickweed. For a wide variety of broadleaf weeds, combine herbicides for broad spectrum control, such as 2,4-D with Banvel*, MCP, or 2,4-DP. Apply the selected herbicide at least 2 weeks before the seeding date and strictly follow the directions and precautions on the container.
3. Mow closely - set the mower at 3/4 to 1 inch.
4. Fill small isolated depressions in grade with high quality topsoil.
5. Apply lime based on a soil test.
6. Spread fertilizer based on a soil test. Nitrogen should be applied at 1 pound per 1000 square feet.
7. Dethatch (verti-groove) and/or core aerify with a machine specifically developed for this purpose. Adjust the rotating blades to penetrate completely through the thatch layer and at least 1/2 inch into the soil. Aerifying equipment should also penetrate through the thatch layer and 1 to 3 inches into the soil. Coring holes should have a maximum spacing of 3 inches.
8. Seed with a high-quality turfgrass mixture adapted to the intended use and expected level of maintenance.



9. Drag the area with a steel door mat or a piece of cyclone fence when loose thatch material on the surface is relatively dry. Rake excessive thatch from the surface.
10. Water thoroughly. Light frequent watering (daily) may be continued to hasten germination and establishment of newly seeded lawn grasses.

Late summer to early fall is the most appropriate season for this procedure. Early spring is the next best choice. In the spring, however, success is usually more difficult. An increased weed problem, particularly crabgrass, can be expected from renovation in the spring. Applying siduron as a preemergence crabgrass herbicide, as the last step in the procedure, would be appropriate. More information on lawn establishment can be found in Rutgers Cooperative Extension publication FS 584, *Seeding Your Lawn*.

Various types of dethatching (verti-grooving) equipment are available. Only certain ones are effective and should be selected carefully for best results. The machine should have straight steel blades (at least 1/8 inch thick) spaced 1-1/2 to 2 inches apart, and be rigidly attached to the revolving shaft. Blade depth should be easily adjustable to allow complete penetration through the thatch layer and at least 1/2 inch into the soil. A small amount of soil will be displaced with a minimum disturbance of existing grade and desirable lawn grasses. Certain machines verti-groove and seed at the same time. The machine should provide conditions for seed-soil contact.

B. Less than 30 percent desirable lawn grasses are present with thatch layer less than 1 inch:

1. Test the soil - see procedure A.
2. Apply glyphosate according to directions and all precautions on the container. Glyphosate, a non-selective herbicide, will effectively eradicate plant growth in the treated area. It is available to homeowners under the product name: Kleen Up, and to professionals as: Roundup. Retreat areas which do not show complete eradication after 10 days.
3. Proceed as outlined in A, but exclude steps 1 and 2.

Generally, a lawn which has lost 70% or more of desirable grasses, becomes heavily infested with a variety of broadleaf and grassy weeds. In less common situations, where a serious weed problem has not infested the area, procedure "A" would be appropriate.

A lawn can be renovated with seeding or sodding. If immediate restoration is desired and/or the season is inappropriate for seeding, renovate with a high-quality sod. Follow the procedure outlined earlier and add this step: after complete eradication is achieved (Step 3), strip off the dead mat of grasses, weeds, and thatch.

A garden spade can be used to remove the dead mat, but a sod cutter (set to cut at the junction of thatch to soil) to remove this matted layer is most effective. After removal, proceed as outlined in "A," but exclude steps 1 and 2. Procedures for sodding are given in Rutgers Cooperative Extension publication FS 104, *Steps to an Instant Lawn*.

C. Less than 30 percent desirable lawn grasses are present with thatch layer of more than 1 inch:

Follow the procedure outlined for "B" and strip off the dead mat as outlined under "B." Whether seeding or sodding removing the thatch layer is essential for reestablishing desired lawn grasses.

D. Difficult-to-control, undesirable perennial grasses such as bentgrass, quackgrass, tall fescue, and orchardgrass infest the lawn area:

Follow procedure "B" or "C." Selective control of these undesirable perennial grasses in an otherwise satisfactory lawn is not available. To eliminate them, desirable lawn grasses must be sacrificed in a complete eradication procedure with glyphosate.

Renovation according to these four procedures for different lawn situations is an effective and efficient way of restoring lawn areas that have deteriorated. However, it will not solve problems such as: soil drainage, deeply compacted soils, major deficiencies in grade, very rough surfaces, or phytotoxic soil contaminants. These conditions will require complete reconstruction procedures.

Other available references are: FS 102, *Your Lawn and Its Care*.

Mention or display of a trademark, proprietary product, or firm in text or figures does not constitute an endorsement by Rutgers Cooperative Extension and does not imply approval to the exclusion of other suitable products or firms.