Lawn renovation

Turfgrass renovation improves an area by seeding into the existing sod. It is a selective tillage process that falls short of completely reestablishing the turf. Renovation becomes necessary when the lawn has been damaged to the extent that it cannot recover with standard maintenance practices, such as irrigation and fertilization.

When a lawn is damaged beyond its capability to recover, some environmental factor caused it. If the cause is not effectively dealt with, renovation will not be successful. Causes of turf deterioration may include poor drainage, thatch buildup, compaction, excessive shade, unadapted grass species, low fertility, Fusarium blight, or many other causes. Most problems can be corrected with renovation and proper maintenance.

The renovation method used depends on such factors as the amount of desirable permanent turfgrass species present, as well as the amount and kinds of undesirable grass or grass-like weeds and other weeds present. The thickness of thatch accumulation should also be considered.

A soil test should be made prior to starting renovation. Soil testing provides information on the nutrient status of the soil at nominal cost. County extension offices have shipping boxes, directions for taking samples, and information sheets that should be sent to the Iowa State Soil Testing Laboratory with the sample.

Early fall and spring are ideal times to renovate lawns because the favorable weather enhances recovery. Summer renovation is not recommended.

The following are step-by-step instructions on renovating turfgrass areas for three situations.

Program I

This program is designed for areas containing more than 50 percent of desirable permanent grass species, containing no other perennial grasses and having a thatch depth not more than $1\frac{1}{2}$ inches.

1. All the weeds present in the area to be renovated should be properly identified. If only easy-to-kill weeds, such as dandelion and pantain, are present, 2, 4-D may be applied. The area then can be seeded 2 weeks after application. If hard-to-kill weeds, such as ground ivy or clover, are present, then 2,4-D should be applied in combination with dicamba or MCPP. A 6-week waiting period is required before seeding can begin (see PM 930, *Lawn Weed Control*).

2. Mow the area as short as possible ($\frac{3}{4}$ inch), removing all the clippings. This is to ensure that the germinating seedlings obtain enough light to support their development.

3. Thatch must be removed by mechanical means. Thatch is a layer of dead stems, roots, and leaves that have accumulated between the green leaf tissue of the turf and the soil. Thatch can damage turf by restricting movement of air, water, nutrients, and pesticides into the root zone. Power rakes are available from many garden equipment rental outlets. Power rake the area in four directions (including diagonally) as many times as necessary to remove the accumulated thatch. Remove all the debris (see PM 1127, *Thatch Contol in the Home Lawn*).

4. If this area has had a crabgrass problem, and you are renovating in the spring, siduron (Tupersan) is an effective herbicide for preemergent crabgrass control that is safe in the seedbed. It is available to the home owner only in starter fertilizers with crabgrass preventer (siduron). **Do not use regular turf fertilizers with crabgrass killer.** Apply the material according to the label directions.

5. If a starter fertilizer has been applied with crabgrass preventer, it is not necessary to apply more fertilizer at this time.

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Apply fertilizer and lime according to soil test recommendations. Where a soil test has not been made, apply 10 pounds of triple superphosphate (0-46-0) per 1,000 square feet. Immediately prior to seeding, broadcast 20 pounds of 10-5-5, 10-6-4, or 20 pounds of 16-8-8 fertilizer, or the equivalent, per 1,000 square feet. The fertilizer must be turf grade, having an approximate 2-1-1 ratio and containing at least 35 percent of the total nitrogen as water insoluble or controlled release nitrogen. As an alternative, 7 to 8 pounds of 13-25-12, 10 pounds of a 10-10-10, or 5 to 6 pounds of an 18-46-0 farm grade (water soluble nitrogen) fertilizer may be applied per 1,000 square feet. Use of a water-soluble fertilizer will necessitate refertilization after 6 to 8 weeks of growing weather. Work the fertilizer into the soil by dragging the area with a large doormat or piece of chainlink fence (see PM 1057, *Maintenance Fertilization of Turfgrass*).

6. A turf-type disk seeder is the best tool for seeding. This machine cuts grooves into the soil and deposits the seed in the groove, enduring good seed-soil contact necessary for rapid germination and establishment. If no disk seeder is available, spread seed uniformly over the area with a drop-type seeder. The total seed quantity should be halved, sowing one-half in one direction and the other at right angles to the first.

Seed the area with high quality seed of the permanent species best adapted to the environmental conditions of your area. For sunny areas, a blend of two to five Kentucky bluegrass varieties is recommended. Improved varieties that have done well in Iowa include Adelphi, Baron, Bonnie blue, Bristol, Cheri, Glade, Majestic, Midnight, Ram 1, Touchdown, and Victa. Kentucky bluegrass should be seeded at a rate of 1 to 1½ pounds of seed per 1,000 square feet. To obtain a relatively fast cover with spring seeding, Pennfine or Manhattan perennial ryegrass may be added to the total mixture. Fall seedings of Kentucky bluegrass establish quickly. Therefore, bluegrass-ryegrass blends should not be planted at this time.

In partially shaded areas, use a mixture of 50 percent chewings or red fescue and 50 percent Kentucky bluegrass. Heavily shaded areas may be seeded with 100 percent chewings of red fescue at a rate of 2 pounds of seed per 1,000 square feet.

Drag the area again to work the seed into the seedbed.

7. To help retain moisture and promote germination, mulch the area with a light application of straw (1 to 1½ bales per 1,000 square feet) or reed-sedge peat. Care must be taken not to apply a layer of mulch so heavy that it smothers the existing grass.

8. Lightly irrigate the area when dry. Irrigation should only be sufficient to moisten the surface. Avoid runoff.

Program II

This program is designed for areas containing less than 50 percent of desirable grass species and having a thatch depth of not more than 1½ inches.

1. After omitting one regular mowing, apply glyphosate (Roundup®) or paraquat according to label recommendations. Allow 7 days before renovation, then follow steps 2 through 8 in Program I.

Program III

Use this program when the thatch layer exceeds 1½ inches in depth.

1. Treat the area with glyphosate or paraquat as in Program II.

2. Seven days after glyphosate application, remove the sod with a mechanical sod cutter.

3. Till the top 4 inches of soil with a rotovator. Grade off the high spots and fill in low spots.

4. Same as step 5 in Program I.

5. Apply seed with a drop-type seeder according to recommendations in step 6 of Program I. Lightly roll the area to place the seed in firm contact with the soil.

6. Mulch. Same as step 7 in Program I.

7. Water. Same as step 8 in Program I.

Turfgrass renovation is time consuming and expensive, and it is only the first step in having beautiful turf. A sound management program must be followed to ensure continued improvement of the turf.

Mention of specific companies or brand names does not imply endorsement of a particular product.

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