

Turfgrass Renovation

There are times when lawns are damaged by heat, drought, disease, and other factors beyond one's control to the extent that reseeding may become necessary. Situations also arise where the area was originally established to inferior species or cultivars, or where the area has become infested with perennial weeds, such as bromegrass, orchardgrass, and quackgrass that cannot be selectively controlled. If the slopes and contours on the area are satisfactory, it may be possible to reestablish the area without major tillage. This is referred to as "turfgrass renovation" and is generally much less expensive than completely replacing the lawn. In renovation, the existing grass is killed, and seeding is done directly into the dead sod.

If the lawn has deteriorated to the extent renovation becomes necessary, remember something caused this situation. If the cause was dry conditions, it may be necessary to install irrigation. Other factors may include poor drainage, thatch buildup, compaction, excessive shade, and low fertility. Simply reestablishing the area will not be effective if the causes are not dealt with, and it may be necessary to change management of the area.

In situations where maturing trees and excess shade are the problem, be sure to select shade-adapted grasses for the reestablishment see Iowa State University Extension and Outreach Publication HORT 3023: **Selecting a Grass Species for Iowa Lawns** store.extension.iastate.edu/product/5083.

The renovation method used depends on the amount of desirable permanent turfgrass species present, as well as the amount and kinds of weeds present. The thickness of thatch accumulation also should be considered.

In Iowa, late summer–early fall are ideal times to renovate lawns. Spring and summer renovation is possible, but not recommended. The best time to reseed is August 15 to September 15. In some years, it may be possible to go later than September 15, but the likelihood of success decreases each day past that date. If there are perennial weeds in the existing turf that have rhizomes (underground stems) such as bromegrass and quackgrass, the process needs to start well ahead of the seeding date. It is important to plan ahead. Herbicides to kill the weeds should generally be applied in July for an August 15 seeding. Quackgrass is particularly difficult to control and additional time and herbicide applications may become necessary (see a recent turfgrass blog post: **Quackgrass (Elymus repens) In Turf** extension.iastate.edu/turfgrass/blog/quackgrass-elymus-repens-turf).

The exact procedure needed for renovation will depend on the condition of the existing lawn. If there is at least 50% of the desirable turf remaining and there are no weeds on the site that require non-selective control, it may not be necessary to kill everything and start over. If most of the site is dead already, and particularly if there are perennial grasses present that need to be killed by a non-selective herbicide, it will be necessary to kill everything before seeding takes place.

IOWA STATE UNIVERSITY
Extension and Outreach

HORT 3113 July 2021

Here are step-by-step instructions on renovating turfgrass areas, depending on the current condition of the site:

Program I

This program is designed for areas containing more than 50% of desirable permanent grass species, containing no other perennial grass weeds, and having a thatch depth not more than 1.5 inches.

- Begin by identifying the weeds in the lawn. Many weeds, such as dandelion and plantain and other broadleaf species, can be selectively removed with a combination of broadleaf herbicides that are readily available on the market. These products kill the weeds, but do not kill the grass. It will be necessary to wait 4 to 6 weeks after these materials are applied before reseeding, because these can damage grass seedlings. These products also can be applied in the fall after the new grass is well established. These products include herbicides such as 2,4-D, dicamba, and Methylchlorophenoxypropionic acid(MCPP). See HORT 3066: **Turfgrass Weed Control for Professionals,** store.extension.iastate.edu/product/14892, from Purdue University, to determine which weed species are in the lawn and which herbicides should be used.

- Before seeding, mow the area as short as possible, about three-fourths of an inch, removing all clippings. This ensures germinating seedlings have enough light to support their development.

- If there is excessive thatch, it must be removed by mechanical methods just before seeding. 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 ISU Extension and Outreach Publication PM 1756: **Thatch Control in the Home Lawn**, store.extension.iastate.edu/product/5314.

- If this area has had a crabgrass problem, and is being renovated 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. Tenacity (mesotrione) also may be used at the time of seeding in lawns that are being seeded with Kentucky bluegrass. Follow the label carefully.

- If a starter fertilizer has been applied with crabgrass preventer, it is not necessary to apply more fertilizer at this time. 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% 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 chain link fence see ISU Extention and Outreach Publication PM 1057: **Lawn Fertilization** store.extension.iastate.edu/product/4378.

- A turf-type disk seeder or slit seeder is the best tool for seeding. This machine cuts grooves into the soil and deposits the seed in the groove, ensuring 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 the area. For sunny areas, a blend of two to five Kentucky bluegrass varieties is recommended at a rate of 1 to 1.5 pounds of seed per 1,000 square feet. To obtain a relatively fast cover with spring seeding, 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% fine fescue and 50% Kentucky bluegrass. Heavily shaded areas may be seeded with 100% fine fescue at a rate of 3 to 5 pounds of seed per 1,000 square feet.

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

- To help retain moisture and promote germination, mulch the area with a light application of straw (1 to 1.5 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.

- 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% of desirable grass species and having a thatch depth of not more than 1.5 inches.

- After omitting one regular mowing, apply glyphosate (Roundup®) according to label recommendations. Allow seven days before renovation, then follow steps 2 through 8 in Program I. If quackgrass is a problem, more than one application of glyphosate separated by two weeks may be necessary. Be sure to start at least two weeks earlier.

Program III

Use this program when the thatch layer exceeds 1.5 inches in depth.

- Treat the area with glyphosate as in Program II.

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

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

- Same as step 5 in Program I.

- 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.

- Mulch. Same as step 7 in Program I.

- 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.

More Information

The following publications are available at the **Iowa State University Extension Store**,store.extension.iastate.edu:

- PM 930: **Weed Control in Home Lawns**
  store.extension.iastate.edu/product/4242
- HORT 3066: **Turfgrass Weed Control for Professionals**
  store.extension.iastate.edu/product/14892
- PM 1057: **Lawn Fertilization**
  store.extension.iastate.edu/product/4378
- PM 1447D: **Responsible Phosphorus Management Practices for Lawns**
  store.extension.iastate.edu/product/4883
- HORT 3093: **Turfgrass Management Calendar: Kentucky Bluegrass Lawns**
  store.extension.iastate.edu/product/4383
- HORT 3021: **Fall Tips to Ensure a Healthy Green Yard in the Spring**
  store.extension.iastate.edu/product/14284
- HORT 3023: **Selecting a Grass Species for Iowa Lawns**
  store.extension.iastate.edu/product/5083

Reference

Christians, N. E., Patton, A. J., Law, Q. D. (2017). Fundamentals of turfgrass management. 5th ed., Wiley, Hoboken, NJ.

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