

# Renovating Your Lawn

Gregg Munshaw, Plant and Soil Sciences

Often a poor lawn can be improved by using proper maintenance practices, including mowing, fertilizing, watering, and pest control. In some instances, however, portions of the lawn must be reseeded. You may consider re-establishing your lawn if:

- Less than 50 percent of the lawn contains the desired turf.
- Soil is excessively compacted.
- You want to replace existing grass with an improved variety more tolerant to pests, heat, and drought (Figure 1).
- You need to decrease weeds such as bermudagrass or quackgrass.
- You want to reduce thatch and reseed with a non-thatch forming grass.
- You want to improve a turf damaged by heavy traffic, white grubs, diseases, drought, etc.

Usually one of two methods is used to re-establish a lawn: conventional or renovation. The conventional method involves killing existing vegetation, tilling the soil, and replanting. The advantages of conventional tillage include more complete control of weeds and undesirable grass, a smoother soil surface, and the opportunity to improve the existing soil by adding organic matter and sand. Renovation involves replanting without completely tilling the soil and often without destroying all existing vegetation.

This publication details how to renovate a lawn. For more information on the conventional method, see *Lawn Establishment in Kentucky* (AGR-50).

## Renovation

The advantages of renovation include:

- Low erosion risk
- Little or no post-establishment repair
- Few mud or dust problems
- Short period of turf discoloration
- Less equipment required, reducing costs
- No change to original grade
- Little damage to root systems of older trees and shrubs



**Figure 1.** Drought-stressed Kentucky bluegrass (left) and tall fescue (right) lawns. Drought tolerance is only one of the benefits of conversion to tall fescue.

## Keys to Successful Renovation

Follow the methods described below for a successful lawn renovation. Successful renovation involves selecting the best grass, eliminating competition from other grass or weeds, good timing, and proper seedbed preparation and seeding.

## Selecting the Best Grass

Renovation is often used to improve an established Kentucky bluegrass lawn. Although it is possible, renovating a lawn with Kentucky bluegrass seed is difficult; turf type tall fescue seed is a better choice. Difficulties with bluegrass include length of germination (10-21 days), poor seedling vigor, and extremely small seed that can easily be placed too deep in the soil. Several months may be required for complete establishment of Kentucky bluegrass, but only two or three weeks may be required for tall fescue.

Turf type tall fescue is the grass of choice for home lawns across Kentucky. It tolerates heat, drought, and pests better than Kentucky bluegrass. Its tolerance to these stresses results in less maintenance and reduces or eliminates the need for annual renovation. Improved cultivars are dark green and fine textured and look very similar to Kentucky bluegrass. Turf type tall fescue is the clear choice for the year-round best looking and environmentally friendly lawn.

If you choose to stay with Kentucky bluegrass, renovation is not the only method for improving it. Kentucky bluegrass has excellent lateral growth, so timely fertilization, mowing, watering, and weed control will greatly improve a poor Kentucky bluegrass lawn. Proper maintenance is often more effective in improving Kentucky bluegrass lawns than applying seed.

## Eliminating Competition

Germinating grass seedlings cannot compete with aggressively growing grasses or weeds. To reduce or eliminate competition:

- Use a non-selective herbicide such as glyphosate (Roundup Pro, Kleenup, others) to kill all grasses and grassy weeds (Figure 2). Weeds such as nut-sedge, wild violets, tall fescue clumps, and nimblewill may survive or recover after spraying, but these weeds are less of a problem when you are establishing an aggressive species like tall fescue. When renovating a thick Kentucky bluegrass turf with tall fescue, it is usually best to use a non-selective herbicide to eliminate the bluegrass. You may not need a non-selective herbicide if the existing bluegrass is very thin and poor. If thick Kentucky bluegrass turf is renovated without using glyphosate, few tall fescue seedlings will establish, and they will usually have coarse leaf blades, thus reducing turf uniformity and overall quality. If hard to control weeds like bermudagrass exist in the lawn, multiple applications of a non-selective herbicide spaced three weeks apart through the summer will likely be necessary for maximum control.
- Following sufficient browning of the lawn, set the mower low to scalp off the majority of the leaf tissue. Remove the vegetation.
- Heavily dethatch or thin the lawn by going across it several times with a lawn dethatcher/verticut machine.

## Timing

The best time to renovate is mid-August through late September. The second best time is mid-February through March. Plantings in the spring may struggle, depending on how hot and dry the following summer is. Irrigation during the following summer will likely be necessary to help spring plantings persist. Seedlings made in June and July are seldom successful for two reasons: not enough moisture available for the young seedlings and the extreme competitiveness of summer annual weeds like crabgrass.

Snow seeding—the practice of applying seed over snow in the hopes that the seed will find its way to the soil surface



**Figure 2.** Glyphosate, a nonselective herbicide, can be used to kill most weeds. The resulting dead vegetation will help hold moisture, control erosion, and reduce mud until the grass is established.

as the snow melts—is not recommended. As the snow melts, seed may wash, resulting in poor distribution, and there is no way to ensure good seed to soil contact. Finally, as previously mentioned, seed that germinates in the spring has much less chance of survival through the first summer.

## Preparing the Seedbed and Seeding

Broadcasting seed on the soil surface without thinning the existing vegetation is almost never successful. For seeds to germinate and survive, they must have good soil contact. Seed that is broadcast over an unprepared surface will remain on the surface and will not produce a viable plant. Further, newly germinated seedlings cannot compete with mature grass or weeds and will often be crowded out. Sometimes a heavy raking will loosen the soil surface enough, but most often the surface is very hard. Weeds, dead grass, or thatch can make surface preparation by raking very difficult.

Thatch is a tightly intermingled organic layer that often develops just above the soil surface in Kentucky bluegrass lawns. If the thatch layer is a half inch or thicker, make every effort to remove as much of the thatch as possible. You can use a dethatch-

ing machine (vertical mower), but several passes across the turf will be necessary. (For more information on thatch removal, see *Aerifying and Dethatching Lawns* [AGR-54].) A thatch layer of three quarters of an inch or thicker can also be removed with a sod cutter. When cut just above the soil surface, the highly organic strips of sod are very light and easy to remove. The amount of organic matter removed from a heavily thatched Kentucky bluegrass lawn might amaze you. You should be prepared to deal with a very large volume of organic material either by composting for future use or by appropriate and acceptable disposal methods. Again, organic layers (thatch) can be tilled into the soil which in many cases would have a positive effect on soil quality.

## Soil Testing

If you have not had your soil tested in some time, testing prior to seeding will inform you whether your soil needs phosphorus, potassium, or lime. You may apply these amendments prior to seeding without fear of burning the lawn. To learn more about soil samples, see *Fertilizing Your Lawn* (AGR 212). Refrain from applying nitrogen until after seed has germinated.



**Figure 3.** The underside of a dethatching machine showing the sling blades that remove thatch and create small furrows in the soil.



**Figure 4.** The dethatching machine will not dislodge all vegetation or thatch but should penetrate the soil as deeply as possible and create small grooves for seed. Arrows show trenches created by dethatcher.

## Renovation Methods

The method you choose for renovating your lawn will depend on whether it is an average size lawn or large acreage. You can easily till small trouble spots in a lawn with a hoe or tiller and then reseed and mulch. Also, you can quickly repair small areas with sod bought at a nursery or dug from an obscure part of the lawn. Regardless of renovation method, the goal with planting is to create good seed to soil contact.

## Home Lawns

Home lawns are best renovated with a dethatching machine that will not only loosen the dead grasses, weeds, and thatch but will also leave shallow grooves or slits in the soil surface (Figures 3 and 4). Seeds falling into these slits are much more likely to germinate and produce viable plants. The machine may need to cross the area several times in different directions to disturb the surface sufficiently.

Dethatching machines can often be rented from a local rental agency. Use machines with knives or blades. Spring-tine machines or tines added to your rotary mower are not effective at removing organic material and creating slits in the soil. If a large amount of organic



**Figure 5.** Seeds that lodge in grooves like those above are much more likely to germinate and develop. Without good seed to soil contact, seeds do not germinate, or if germination does occur, the seedlings wither. The seeds above will need to be lightly raked.

material is dislodged by the dethatching machine, it should be removed and discarded. Several garbage bags of thatch may be removed from a small lawn. If the original lawn has little thatch, the debris dislodged by the dethatching machine can remain on the surface, acting as a mulch and helping to conserve moisture.

After dethatching, evenly broadcast seed at a rate of 6 pounds per 1,000 square

feet for tall fescue (Figure 5). Rake the seed lightly into the seedbed or cross the area again with the dethatching machine. Small bare spots in lawns can be renovated without destroying existing grass or preparing the seedbed. Broadcast seed on the soil surface and then cover the seed with about an eighth of an inch of topsoil or sand. You can also use a shovel or hoe to remove clump grasses, dead

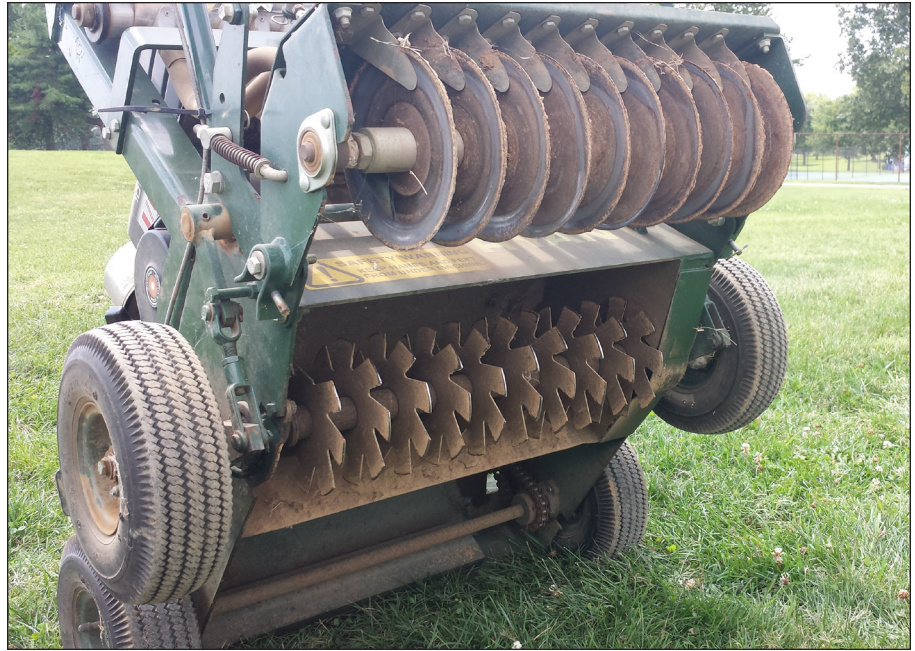
turf, and soil to a depth of half an inch and then repair the area with sod. Slit seeders are also a good option for home lawn renovation if they are available. Some rental stores will have slit seeders, but dethatching machines are much more common. Slit seeders are effective because they cut a groove and then drop seed directly into the groove, thus eliminating the extra step of seeding and raking following dethatching.

### Large Lawns/Large Acreage Turf

Good seed to soil contact is still necessary on large lawns and large acreage turf, even though expense and difficulty make it almost impossible to remove thatch from most large turf areas. These large acreage sites make using a slit seeder a good option as these machines will remove thatch but also limit the amount of time that is needed to seed the area (Figure 6). Many professional turf management and maintenance companies have slit seeders mounted to tractors and powered by PTO that can efficiently cover large turf areas and drill seed.

Large pasture renovators are equally effective. If you use them, you must cross the turf area two to four times, because spacing of the grooves in these large renovators may be 8 inches apart. With all turf/pasture slit-seeders, calibrate to apply  $\frac{1}{2}$  to 1 pound of seed (tall fescue) per 1,000 square feet per pass, or 20 to 40 pounds of seed per acre per pass. If you cross the area three times, you will be seeding from 60 to 120 pounds of seed per acre. Do not use higher seeding rates for each pass, because all the seed is placed within a narrow slit. If too many seeds germinate within the slit, the seedlings will remain very immature and have poor drought/heat tolerance and often become diseased.

For large turf areas with little established turf or thatch, you can achieve seed to soil contact by crossing the area several times with a self-propelled or tractor-drawn open-spoon aerifier (coring machine). The goal in this situation is to not have the spoons reach 2 to 3 inches in the soil, but rather  $\frac{1}{2}$  to 1 inch; seed planted too deep may not reach the surface and survive. You will likely need



**Figure 6.** Many lawn service companies have slit-seeders that dethatch, groove the soil, and plant the seed in one pass across the lawn.

to cross the area multiple times to open the soil enough to get good seed to soil contact. Another method is to disk several times with the disk blades running almost straight. After this minimal seedbed preparation, broadcast tall fescue seed at 250 pounds per acre. Then drag the area with a section of chain link fence, a piece of carpet, or a steel drag mat.

Preparing a seedbed with an aerifier (coring machine) is the best method to thicken a tall fescue turf that you do not want to injure with a non-selective herbicide. After heavy aerifying (several passes over the area), seeding, and dragging, the new plants will emerge and develop in the thin spots where competition is weak. An aerifier does much less damage to an existing turf than does the vertical mower/dethatching machine. Again, the goal for this type of renovation is to avoid making deep aerification holes to maximize seedling survival.

### Post-Renovation Management

Water is critically important during establishment, as seeds must absorb water to germinate. Water is just as important shortly after germination as the new plant has not yet developed a root system to obtain moisture from

the soil and can easily perish if the soil dries. If weather is hot and windy, one or two light irrigations per day may be needed until germination is complete. If heavy thatch was not sufficiently thinned prior to planting, even more frequent watering is needed. Heavy thatch has a tendency to “wick” water from the seed and can severely limit germination. The goal with irrigation during establishment is to keep the surface moist while not allowing puddles to form. The amount of water you will need to apply will be dictated by slope, soil type, and weather. Proper irrigation is the key to successful establishment of new seedlings. While we can sometimes rely on precipitation in autumn, it is best to plan for an efficient method to irrigate in case precipitation is minimal. Many renovations/establishments will fail if not irrigated.

The pre-plant soil test will have alerted you to any deficiencies with the exception of nitrogen. Nitrogen will certainly be needed to get good seedling establishment. If nitrogen is applied before seeding, it will increase the aggressiveness of other grasses and weeds that were not killed, increasing competition against the desirable grasses. Therefore, it is often best to apply the nitrogen soon

after germination. Apply about 1 pound of nitrogen per 1,000 square feet (40 pounds of nitrogen per acre). If applying farm-type fertilizers such as urea, be sure to apply them to dry foliage. Also, to prevent leaf burn, either apply them when the weather is cool or water the turf immediately after fertilizing. If you use the specialty organic turf fertilizers that are sold through garden centers, immediate irrigation is usually not necessary. For more information on fertilizing your lawn, see *Fertilizing Your Lawn* (AGR-212). For information on calibrating fertilizer spreaders, see *Calibrating Fertilizer Spreaders for the Home Lawn* (AGR-211).

Mow as frequently as needed to keep the old grass or weeds from shading the new seedlings. As the new seedlings develop, continue mowing at the height intended for the entire turf area. A common misconception is to allow the grass to grow up tall before the first mowing. It is best to mow with a sharp mower blade (dull blades may pull seedlings out of the soil) when the grass is one third taller

than the intended mowing height. If the intended mowing height is 2½ inches, begin mowing when the grass reaches 3¼ inches in height. For more information on proper mowing, see *Mowing Your Kentucky Lawn* (AGR-209).

Weed control can usually begin, if needed, after the new seedlings have grown enough to have been mowed three times. During germination and shortly thereafter, many herbicides will damage young grass seedlings. Closely follow the instructions on the herbicide label to avoid lawn damage and to protect yourself and the environment. For more information on weed control options, see *Weed Control for Kentucky Home Lawns* (AGR-208).

If the area is seeded during the spring when crabgrass encroachment is a potential problem, apply siduron (Tupersan) or mesotrione (Tenacity, others) at seeding and prior to crabgrass germination. As was previously mentioned, spring seedings will be arduous and will require extra resources and care. If possible, it is always best to complete the renovation in the late summer/early autumn.

### **UK Extension Publications for Improving Your Lawn**

- *Weed Control for Kentucky Home Lawns* (AGR-208)
- *Mowing Your Kentucky Lawn* (AGR-209)
- *Fertilizing Your Lawn* (AGR-212)
- *Liming Kentucky Lawns* (AGR-214)
- *Irrigation Tips to Conserve Water and Grow a Healthy Lawn* (AGR-115)
- *Aerating and Dethatching Lawns* (AGR-54)

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