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Cool-season Lawn Recovery Following Sumer Stress

Authored by Mike Goatley Jr. Professor and Extension Turfgrass Specialist, Virginia Tech

Introduction

Extremes in temperature and moisture 9either too much or too little) often lead to the necessity for repairing cool-season lawns. When recovery is required, both short- and long-term success can be improved by following some basic principles in grass selection, site preparation, and establishment.

Does the lawn need partial or complete renovation?

Following an extended period of summer stress (in particular, drought), fall rains provide a very quick distinction between living and dead cool-season turf. Turfgrasses will quickly resume the expansion and emergence of previously formed leaves that were shut down by the drought and will also initiate new leaf growth that will contribute to an overall greening of the turf within a day or so of a significant rainfall event. If the turf does not show signs of recovery, then make preparations for renovating the turf in the fall, the best season to establish cool-season grasses either by seed or sod.

If the entire lawn has failed, then complete renovation involving an application of a non-selective herbicide such as glyphosate to control all the existing vegetation is often appropriate (Figure 1). But why do you think the lawn has failed? Has the struggle been a recurring theme? These are questions to answer in order to reduce the likelihood of doing this again next season. At this time, you have the opportunity to consider if perhaps another cool-season turf might be better suited to your needs and climate. Do you have shade issues? Then perhaps you need a more shade tolerant turfgrass such as fine fescue in our cooler regions, St. Augustinegrass on the coast, or zoysiagrass pretty much anywhere in the state for partial shade conditions. Our number one acreage grass for lawns across Virginia is turf-type tall fescue. Research at the Hampton Roads research station in Virginia Beach has shown that a mix of tall fescue and improved Kentucky bluegrass traditionally outperforms monocultures of the respective grasses, and many of our sod producers employ this strategy in the production of their cool-season turfgrass sods. In our cooler climates, monocultures of Kentucky bluegrass, tall fescue, fine leaf fescue, and perennial ryegrass can be planted, but even then we recommend you try to plant blends of two or more cultivars within the same species. If you are in a climate where tall fescue repeatedly fails, then perhaps it is time to convert to one of the improved, cold tolerant varieties of zoysiagrass or bermudagrass next summer.

Figure 1. A complete renovation is in progress on this lawn with the removal of all previous vegetation, soil tillage, and seeding of an improved cultivar.

Complete renovation is costly, very labor-intensive and often is not required. Most lawns will likely have problem spots measuring anywhere from 50 to 150 sq feet and these spots will be surrounded by healthy, great looking grass, so it makes sense to concentrate only on the small areas. Whether the

renovation is complete or partial, take the opportunity to introduce the best planting material available by using varieties listed on the Virginia Recommended Turfgrass Variety List that you will find on the VCE publications webpage: https://resources.ext.vt.edu/.

No matter the level of renovation, be sure to conduct a soil test if one has not been done within the past 3 years (Figure 2). Your local extension office can help you with the materials and proper steps to follow in soil testing. And when choosing the grass for spot renovations, try to select grasses with similar appearance and growth habit as to the current lawn in order to maintain turf uniformity.

The final pre-plant step is to properly prepare the soil for planting. Some degree of soil preparation is essential for successful turfgrass establishment; there is a name for simply sprinkling seed over top of an unprepared soil: **bird food!** Complete tillage to a 4 inch depth is sometimes desirable and/or necessary for highly compacted soils or those requiring significant amounts of soil amendments, but at a minimum some type of soil surface disruption is required for seed establishment success. Consider at a minimum making multiple passes with a core aerator (Figure 3) or a power rake/dethatcher for soil preparation. The purpose of these tools is to improve soil to seed contact so that when the germinating seed sends down its root, that plant will quickly have access to water and nutrients. Do-it-yourselfers can often reserve these types of machines or specialized power seeders at equipment rental stores. Most lawn care operators also offer renovation services utilizing the specialized equipment that improves establishment success.

Figure 2. If you have not soil tested within the past 3 years a soil test will let you know if there are any limitations in nutrients or pH that might be contributing to past problems with the lawn, and will help the new establishment succeed.

Figure 3. This site is receiving core aeration in preparation of introducing an improved seeded variety into the existing grass.

How much seed should be planted?

This matters a great deal because obviously there are seedling levels that are too low to produce a successful lawn, but at the same time too much of a good thing in seed is a waste of money and will similarly result in establishment failure. While there are well defined seeding recommendations for new plantings available in information from the VCE website or your local Virginia Cooperative Extension office, this is a tough question to answer for spot renovations. If there is an area of 500-1000 sq ft that needs repair, then weighing out the appropriate amount of seed (it might range from 1 to 8 pounds of seed total for the area, depending on the grass selected and the size of the seed) and applying it with a rotary or drop spreader over the area is fairly simple. However, for only a few problem spots in a lawn, the last thing one needs is a 50 lb bag of seed, so this is where smaller packages of seed become more cost effective.

Let's consider what NOT to do in order to handle spot renovations correctly: visibly seeing 1 seed every sq inch is NOT enough, but at the same time, seed stacked upon seed so thick that you can't see the soil is even worse! It is not an absolute number by any means because seed size among species is highly variable, but for a larger seeded grass like tall fescue, you should be seeding somewhere between 10-15 seeds per square inch in order to correspond fairly well with recommended planting rates for new establishments. For spot renovations where some grass remains, cut the seeding level in half.

Another valuable tool in partial renovations is a surface application of compost for the seed (Figure 4). The compost can be applied either before or during the soil preparation procedures or as a topdressing following seeding. For topdressing, as little as 1/4 inch depth of a quality compost is required. Then, success can be enhanced further by lightly mulching the seeded areas to help conserve moisture, reduce seed movement from rain/irrigation events, and further enhance establishment. Small grain straw works great with about 1 bale/1000 sq ft of area being an appropriate mulching density (Figure 5). The key to the right amount of straw mulch is that you should still be able to see some of the soil underneath the straw. An advantage to straw mulch is that you don't have to worry about picking it up after germination is complete. Simply mow the turf when it needs to be clipped and chop the straw right back into the turf canopy. There also are bagged mulch products made from recycled newspapers available at lawn and garden centers. Many of these products also contain seed and fertilizer and these specialty products are particularly handy for very small renovation areas. Just be sure that you are matching up your turfgrasses when you use these products.

After mulch is applied, initiate light and frequent irrigation to optimize establishment, and as the turf matures, reduce the irrigation frequency and amount. If regular and repeated watering is not a possibility, then simply leave the site alone and let Mother Nature provide the moisture; most of the time our climate will receive satisfactory rainfall to provide establishment.

Figure 4. This completely renovated site has been aerated, seeded, and a surface application of 1/4 inch of compost has been applied.

Figure 5. One square bale of small grain straw per 1000 square feet provides an excellent mulch for water conservation for newly seeded areas and can simply be chopped up and returned to the site with the mower as the new grass arrives.

Also, don't forget the exceptional value of sod for spot renovations. Soil preparation for sod should be the same, but the nature of the product itself results in pieces of living carpet that can be cut and shaped into various sized patches and the improvement in lawn appearance is essentially immediate. Sod is more forgiving in water requirement and frequency than seeding establishments and provides a turf that can handle limited foot traffic almost immediately. Rolling it after installation to maximize sod/soil contact and smooth the surface with the existing grass further enhances both its appearance and chance for long-term establishment success.

Summary

Reviewing the possible reasons for lawn failure and then properly planning and executing the renovation are essential for success with a lawn in the transition zone. Selecting the best species or cultivars for your site and improving your soils are key parts of renovation success.

In search of further information?

There are many other publications on how to grow a healthy, environmentally responsible lawn that can be found under the Lawn and Garden tab on the Virginia Cooperative Extension website.

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