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Fall Lawn Care

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The approaching change in seasons presents an optimal time for renewal and establishment for cool-season turfgrasses and a period of preparation for warm-season grasses before their winter dormancy. Take advantage of the relatively mild weather of the months of September and October to get your turf ready for winter and next year's growing season.

Strategies for cool-season turfgrasses.

Establishment and renovation options. Late-summer to mid-fall is the best time to establish cool-season turfgrasses. Warm days and cool nights provide ideal conditions for the germination and establishment of tall fescue, Kentucky bluegrass, fine-leaf fescues, and perennial ryegrass from seed. Similarly, sod establishment is also favored at this time of year. If you are renovating an existing turf, first try to better understand why the renovation is necessary. If it is sparse, weedy turf, why do you suppose that is the case—neglect, inappropriate mowing heights, environmental limitations caused by too much or too little rain, etc. Is there possibly a problem with the soil such as a nutrient deficiency, an improper pH, poor drainage, or compaction? Could it be that the grass that is currently failing is simply a poor choice for the site, the climate, or the anticipated use of the turf?

The first step towards correcting an existing problem lawn or establishing a new turf is to test your soil. This very cost-effective diagnosis of your soil's fertility and pH status is quite often the answer to the question of "Why did my turf fail?" Many of Virginia's soils are very acid and it is quite possible that a supplemental lime application is required. The fall and winter months are ideal times to make lime applications since it takes weeks to months to fully realize the benefit of the treatment.

What cool-season grass to choose? Use the "Lawns" link under the Home Gardening resources section at the Virginia Cooperative Extension web page at <http://www.ext.vt.edu/resources/> to make the best selection for a grass to fit your needs and for instructions on soil and pre-plant preparations, seeding rates and establishment, and post-planting care. When you have decided on a recommended blend of cultivars within a species or possibly a specific mix of different species, you will next need to choose the best cultivars available. The current Virginia/Maryland Turfgrass Recommended Variety list is posted at http://sudan.cses.vt.edu/html/Turf/turf/publications/publications_page.html.

This list represents joint recommendations of the top performing cultivars in turfgrass variety trials at Virginia Tech and the University of Maryland. Don't expect to necessarily find these cultivars at the garden center of many of the large retailers. There are exceptions, but most often you simply take what you can get at these garden

centers. If you want the best varieties available it is likely that you will have to consult with the experts at a local farmer's cooperative, specialty nursery, or turf and landscape supply store to obtain these superior cultivars.

For new plantings, tilling the soil to a 4- to 6-inch depth is desirable prior to seeding. This affords an opportunity to put the information from a soil test to work and incorporate any recommended lime or starter fertilizer that will aid turf establishment. A starter fertilizer emphasizes phosphorus (P) levels as compared to nitrogen (N) and typical nutrient ratios of N-P-K in these sources are 1:2:1, 1:3:2, and so forth. It is equally important to provide some degree of soil preparation even for overseedings into existing turfs. A few passes with a coring machine (often called an aerifier) or a vertical mower (often called a dethatcher) can be used to prep the soil prior to planting to encourage seed-to-soil contact. Simply applying seed over the top of an existing turf without any soil preparation usually does nothing more than feed the birds and wildlife.

After planting, irrigate lightly and frequently until germination is complete. Avoid excessive amounts of water because this could either wash away or drown the seed. As establishment progresses, gradually cut back on the amount of water applied in order to start promoting a deep root system. The irrigation philosophy is similar for sod establishment, but larger amounts of water can be applied less frequently because of the soil and root mass provided by the sod.

Mow the turf when it needs to be clipped according to its recommended cutting height and follow the one-third mowing rule that says you never remove more than one-third of the leaf blade at any mowing event. Supplemental nitrogen applications can be made later in the fall or early winter if you want a boost in growth or color. There are options for weed control, but carefully read any label before treating for weeds soon after planting because seedling turfgrasses are typically more sensitive to chemicals than a mature turf.

Soil testing and fertility. The fall provides a great time to test your soil to determine nutrient levels and pH. Most of Virginia's soils are acidic in nature and it is a good idea to test your soil at least once every three years to determine if supplemental nutrients other than N are required. Since growing conditions are ideal at this time of year, grasses respond quickly to test-recommended applications of fertilizer and lime. For help in how to properly sample your soil, consult Soil Sampling for the Home Gardener, Virginia Cooperative Extension publication 452-129, at <http://www.ext.vt.edu/pubs/compost/452-129/452-129.html>.

Remember the appropriate grass acronym "SOD" and you will always know when to apply N fertilizer to cool-season turfgrasses. SOD stands for the months of September, October, and December, the prime times for N fertilization of cool-season turfgrasses. The fall presents growing conditions conducive for improving turf density through the development of new shoots and stems, increased carbohydrate storage (i.e. food for the plant), and enhanced root production. Applications of 1/2 to 1 pound of water-soluble N per 1000 square feet are very beneficial during this time, much more so than programs that emphasize heavy spring fertility. Similarly, an early to mid-September application of a controlled release N source (typically at one and one-half to two times greater levels than the standard water-soluble rates previously listed) can provide similar turf benefits.

In lieu of soil testing, it has long been a common practice to apply supplemental potassium (K) to winterize the turf. Research has repeatedly shown that maintaining sufficient levels of potassium in plants is very effective in improving winter hardiness. However, if a soil test indicates K levels in the soil are adequate, the supplemental application wastes money and can result in increased nutrient loss because of potassium's high leaching potential. Soil testing will let you know if an additional K application is warranted.

Cultivation. Periods of active growth are ideal times to cultivate turf. Core aeration and vertical mowing (dethatching) are the two methods of turf cultivation that can provide long-term benefits if done properly and at the right time of year. Any soil that is heavily trafficked is likely to have some degree of compaction that is limiting root development of the turf. Core aeration (removing plugs from the soil, often called "aerifying") is the ultimate means of improving soil aeration. Vertical mowing or dethatching does little to improve aeration, but instead is designed to physically remove thatch, a layer of undecomposed stems and other organic matter that develops between the soil and the turf canopy. Thatch layers greater than 0.5" in depth are deemed worthy of removal in most situations. Fortunately, most cool-season turfgrasses will not develop a significant thatch layer, but a creeping grass like Kentucky bluegrass grown under a moderate to high level of management is likely to develop a thatch layer over time. Check on the depth of thatch in your lawn at the same time you are pulling a soil sample.

Obviously, each of these activities is highly disruptive to the soil surface and the turf itself. Both initially cause stress to the turf due to the physical tearing and severing of shoots, roots, and stems. Ultimately the benefits of the cultivation treatment greatly outweigh these concerns, but it is wise to refrain from aerifying or dethatching cool-season turfgrasses until the fall when turf recovery can be optimized by fertilization and irrigation programs.

Pest control. One of the biggest winter weeds of concern is annual bluegrass (*Poa annua*). There are several pre-emergent herbicides that will control annual bluegrass as well as many other winter annual weeds (henbit, chickweed, geranium, etc.), but if these herbicides are applied they will also prohibit any cool-season turf seed establishment as well. There also are many postemergent broadleaf herbicides available for fall weed control, too. Most of the readily available compounds are two- and three-way mixtures of 2,4-D and related compounds. Many of the perennial broadleaf weeds (plantains, dandelion, clovers, etc.) in the landscape will also have a flush of vegetative growth just like the turfgrass, and this presents a great opportunity to maximize chemical control. Controlling these weeds now will improve overall turf density this fall and beyond and this will help reduce spring weed populations next year.

There usually are not many diseases and insects of major importance at this time of year. Expect to find dollar spot, pink patch, and red thread, and it is not entirely unlikely to maybe find some late-season *Rhizoctonia* blight (brown patch). However, brown-patch levels should be greatly reduced in the fall, and the other diseases listed will likely be of minimal importance because one of the best ways to control them is to provide supplemental N. Use fungicide-treated seed to combat damping off with new seedings. There is potential for early fall applications of certain insecticides for grub control, but really the ideal period for their control occurred from July to August. There might be some late activity from cutworms, armyworms, or sod webworms, but none of these pests typically becomes a major concern at this time of year. A complete listing of recommended pesticides and the pests they target is provided in Virginia Tech's Pest Management Guide at <http://www.ext.vt.edu/pubs/pmg/>.

Strategies for warm-season turfgrasses.

Fertility. In most of Virginia where warm-season turfgrasses (bermudagrass and zoysiagrass across much of the commonwealth and St. Augustinegrass and centipedegrass in Tidewater) are adapted, there will not be a killing frost until mid-October or so. Therefore, there is still time to benefit from a "responsible N program." Cooling temperatures of fall provide warm-season grasses the opportunity to increase carbohydrate and root production as leaves continue to photosynthesize, but overall shoot and leaf development rates decline. The idea behind being "responsible" is to keep the plant active, but not at the expense of increasing its succulence so that it has greater winterkill potential. Levels of 1 pound of water-soluble N per 1000 square feet in September followed by perhaps a one-fourth to one-half pound of N per 1000 square feet four weeks or so later (or until frost) have repeatedly been shown to benefit bermudagrass turf. Research performed over several years at Virginia Tech has always

shown that extending the bermudagrass growing season later in the fall results in an overall healthier plant that performs even better the following spring. A key to success is ensuring that other nutrients, particularly the winterizing nutrient K, are present in satisfactory quantities. The benefits of K in warm-season turfgrass winter survival are quite often more pronounced than those realized with cool-season turfgrasses.

Pest control. There are more pre-emergent weed control options in dormant, non-overseeded warm-season turfgrasses than typically are available for cool-season turf because warm-season grasses should not be planted now (unless one is installing sod in early to mid-fall). The dormant warm-season grass obviously provides no competition to cool-season winter weeds, so in order to maintain a high level of uniformity, some type of weed control is often necessary. Most standard turf pre-emergent herbicides will have activity on annual bluegrass, and timing is crucial to get superior control. In most parts of the state, germination begins the first of September. As mentioned previously, many of these chemicals also have excellent activity on many broadleaf weeds, too. An option that did not exist for cool-season turfgrasses but is applicable when the warm-season turf is fully dormant, is the use of non-selective herbicides later in the winter. Common herbicides such as glyphosate and glufosinate can be applied over the top of a dormant warm-season grass. The key word is "dormant"! Do not apply these herbicides either too soon in the fall or during the spring transition period next year.

Insect and disease pressure for a grass that is preparing for dormancy are typically minimal. If your bermudagrass turf has a history of spring dead spot, you might consider a preventive application of a labeled fungicide later this fall before the turf goes dormant (this is the only way to chemically control this disease; spring treatments are of no value). Infrequently, a disease called large brown patch (often also called "cool weather brown patch") has been reported in warm-season turfgrasses with the classic brown patch symptoms showing up in the spring as the grass emerges from dormancy. Again this is a problem that should only be treated for in the fall if the turf has a past history of this disease.

Cultivation. It is too late in the growing season to safely aerify or dethatch warm-season turfgrasses. Plan on doing this in late spring or early summer of next year.

Overseeding. A unique aspect of warm-season turfgrass management that is often practiced in order to provide winter color and an actively growing playing surface for sporting venues is the seeding of ryegrass (*Lolium* spp.) into the warm-season turf canopy in the fall. Perennial ryegrass and annual ryegrass are the major cool-season grasses used for this form of "overseeding." Generally speaking, bermudagrass tolerates winter overseeding to a greater degree than zoysiagrass, centipedegrass, or St. Augustinegrass, but all of these grasses will be drastically affected next spring.

While overseeding does provide the color that most everyone deems preferable to dormant turf, the practice does not come without its consequences. Simply put, the cool-season grass seed is nothing more than a weed to the warm-season turfgrass, and is a tremendous competitor next spring when the warm-season turf is breaking winter dormancy. Eventually, the overseeded grass is going to die (often it will be encouraged to die by chemical or cultural treatment) and will result in a very low-quality turf until the warm-season grass recovers.

What ryegrass should be used? Annual ryegrass will be significantly cheaper per pound of seed and will germinate and establish quicker than any other turfgrass. However, the initial savings in purchasing annual ryegrass are usually more than compensated for by the increased mowing requirement that annual ryegrass will have as compared to perennial ryegrass. If you desire the highest quality overseeded turf, perennial ryegrass is desirable. Overseeding rates for lawn turf should be in the range of five to ten pounds of pure live seed per 1000 square feet and ten to 20 pounds per 1000 square feet are recommended for golf and sports turf applications. Some surface

preparation (scalping or light vertical mowing) of the warm-season turf will enhance overseeding establishment by promoting seed-to-soil contact. Of course, neither of these practices does the warm-season turf any favors at this time of year. However, overseeding in general goes against sound agronomic principles! It is done to gain the color and playability that an actively growing ryegrass can deliver and the deleterious effects on the warm-season grass next season are to be expected.

Overseeding greatly alters strategies for winter weed control because most pre-emergent herbicides will also control the overseeded grass. There are options but timing and/or choice of the appropriate material are critical for success. There are also herbicide options as spring transition aids that will warrant consideration later in the fall. These chemicals demonstrate a great degree of selectivity in removing ryegrass from bermudagrass turf. Similar to winter weed control options, choosing the most appropriate chemical and timing the application right are keys to success.

Summary.

There are obviously many things that can (and should) be done to turf as the seasons change. Many turf management strategies that you can apply during the late summer/early fall months will greatly impact the turf next year. Choose wisely and reap the benefits to your turf next season.

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