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Installation of Dormant Sod

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In the Southeastern United States, horticulturalist routinely recommend transplanting trees and ornamentals when they are dormant during the late fall or early winter. The root-ball is typically buried deep enough where soil temperatures are conducive for continued root growth during the cooler months. This practice gives the plant's root system time to establish when there is little demand for water and nutrients. For turfgrass sod where the roots originate at the soil surface, dormant sodding is a more risky endeavor. Soil temperatures at or near the soil surface are more likely to fluctuate, closely mimicking the ambient air temperatures. Therefore, if the air temperature is at or below freezing temperatures there is a risk that roots of newly laid sod will freeze. Cooler climates may adversely influence some species. Increased winter injury has been observed on zoysiagrass and centipedegrass compared to bermudagrass sodded late in the year. For various reasons, however, dormant sodding of warm-season grasses is not an uncommon practice. If grasses, like bermudagrass, centipedegrass, St. Augustinegrass, and zoysiagrass, are going to be established while dormant there are management practices that can improve the chances of success.

Recommendations for sodding during ideal periods also apply to off-season sodding. Rootzone preparation is critical for success. During site preparation and prior to turfgrass establishment is the best time to take a soil sample for determining pH and nutrient needs. Modification of soil pH is most beneficial when lime (used to raise pH) or sulfur (used to lower pH) can be incorporated into the soil. Corrections of soil nutrient deficiencies like phosphorus (P) and potassium (K) are more easily made prior to establishment. While all essential nutrients are required for turfgrass growth, there is inconsistent information on P and K needs during establishment and winter. Some studies report decreased winterkill and disease occurrence with the addition of P and K, while other researchers have reported no differences in cold hardiness or pathogen resistance due to increased rates of P and K. Because soluble nitrogen is mobile in the soil and the grass's root system is incapable of acquiring this nutrient, little nitrogen is needed when sodding with dormant grass. The first nitrogen application should be made in the spring once soil temperatures at the 4 inch depth are consistently 65° F or higher.

Loosening the soil and incorporating nutrient amendments by tilling to a minimum depth of 3 to 4 inches is typically adequate for turfgrass establishment. If possible, tilling deeper is always better. After thorough tilling and mixing, the soil should be leveled, smoothed and moistened. Large rocks, stones, weeds, and other debris should be removed from the rootzone prior to planting. Also prior to laying sod, the soil should be lightly watered but not saturated. Ruts from foot traffic or equipment can occur when soils are excessively wet and are more difficult to repair after the sod is laid.

To prevent drying, potential cold injury, and death of roots, sod should be installed within 24 to 48 hours after harvest. Turfgrass sod does not have a long shelf-life in the best of conditions, but if freezing temperatures are predicted while sod is still on the pallet, the exposed roots could freeze and die. Another advantage of getting the grass off the pallet as quick as possible is to take advantage of the earth's radiant heat. Latent soil temperatures may offer some protection from cold injury when compared to turfgrass exposed to the elements such as grass that has been left on a pallet. Sod should be laid tight and rolled to ensure sod to soil contact.

When sod is laid at an ideal timing and under optimum conditions, water management is critical. This is true for dormant season sodding also. Although the root system of dormant grass is not highly active or developed, some water is needed to keep the growing points of the plant hydrated. Light waterings immediately after planting are needed for off-season sodding too. Because the evapotranspirational demands of a dormant plant are lower than actively growing grass, the amount of applied water can be reduced. Where green sod would need multiple, light, daily waterings, dormant laid sod will need only enough water to keep the upper 1 to 2 inches of soil moist. During the winter months rainfall may suffice, but if irrigation is needed 0.75 to 1.0 inch of water may be necessary every two weeks. After establishment, frequently check the soil moisture by pulling up sod ends and edges to make sure the soil is moist.

The survival of off-season transplanted sod is dependent upon avoiding desiccation, or drying, and low temperature injury. Due to a limited root system, desiccation can be a significant problem. It is not uncommon to have days during the late winter and early spring where the weather seems very nice. It is easy to enjoy days where there are no clouds in the sky, the temperatures are in the low 70's with little humidity, and a comfortable 5 to 10 mph breeze. However, these are ideal conditions for plant desiccation and sod loss because under this weather scenario water is rapidly lost from the soil and plant to the atmosphere. In as little as a day, turfgrass that has an undeveloped root system can desiccate. Direct low temperature injury can be a problem because the crowns, stolons and shallow rhizomes may be frozen and killed. Unfortunately, newly sodded turfgrass lacks deep rhizomes and the expansive root system necessary to recover from these winter stresses. The result is grass that dies while dormant and is unnoticed until after spring transition. Desiccation and cold injury may be mitigated by topdressing the dormant sod. Furthermore, topdressing can smooth shallow depressions and fill seams, conserve moisture, and potentially retain heat near the soil surface.

Successful transplanting is dependent on a healthy sod, which is difficult to determine when the sod is dormant or overseeded. Overseeding sod with ryegrass may reduce turfgrass vigor and quality. While overseeded turfgrass may look appealing during the winter months, during the spring the ryegrasses can out-compete the warm-season grass for space, water, nutrients and light. The result can be a poor spring transition, delayed green-up of the warm-season species, and potentially turfgrass death. The worst case scenario is when a poor transitioning grass, like centipedegrass, is overseeded with ryegrass and sodded during dormancy. This is a situation where spring survival is dependent on good rootzone preparation and proper water management.

Winter annual weeds are common for dormant sodded grasses and there is a need to apply preemergence herbicides for control of summer annual grass species, like crabgrass. Research

has shown that for dormant sodded bermudagrass, common postemergence broadleaf herbicides have no effect on rooting. The herbicides were applied 45 days after sodding. Similarly, preemergence herbicides had no effects on root development when applied at labeled rates 30 days after installation. Always read and follow the label recommendations before applying any pesticide to newly planted grass.

In summary, successful sod transplanting depends on proper soil preparation, good soil-to-sod contact, avoiding low temperature injury, and most important, proper water management to prevent desiccation. This and other fact sheets are available at www.gaurbanag.org and www.georgiaturf.com.