



To ensure timely opening of a new course or a renovated area, consideration should be given to the turf's proper planting window. Using normal seeding rates for turf establishment will hasten stand development by minimizing seedling competition for space, water, and nutrients.

# TURF ESTABLISHMENT: PEEPHOLE OR PANORAMA?

Establishing new turf during the proper planting window is essential for success.

BY CHARLES B. (BUD) WHITE

**T**he final phase of every new construction or major renovation project is establishing the bare ground with a new stand of turf. At this point, the only remaining question is, can it be done successfully despite the time of year, or is the time of year critical to the success of the project?

In the turf industry, we refer to the optimal time frame for planting seed and sprigs as the proper planting window. By failing to appreciate

the importance of seeding or sprigging during the proper planting window, many newly constructed courses have experienced severe setbacks in terms of poor grow-in and delayed opening. In essence, they chose to ignore well-established protocol and fell victim to the ravages of unfavorable growing conditions.

Generally, the accepted planting window for warm-season grasses, such as bermudagrass and zoysiagrass, is late spring through midsummer,

whether established from seed or sprigs, and for cool-season grasses, such as bluegrass, bentgrass, and fescue, late summer through early fall.

Although there can be slight variations to these general time frames, planting well beyond these dates should definitely be avoided. This article will examine the importance of scheduling turf establishment during the proper planting window and some of the more serious ramifications of going astray.

Temperature and day length play key roles in the proper timing of warm-season grass establishment. For example, bermudagrass will not grow vigorously unless the daytime high plus nighttime low temperatures total more than 150°F. At combined temperatures below this value, bermudagrass may look green, but for all practical purposes, it is in a semi-dormant state characterized by minimal leaf, stem, and root growth. For this reason, it is physically impossible to push the opening date for new courses ahead of schedule by establishing bermudagrass before the beginning of its proper planting window in late spring.

At the other end of the bermudagrass planting window, its initial survival rate during winter is greatly diminished if it is established after mid-summer. This is due primarily to the fact that the maturation rate of bermudagrass is held in check by the shorter day lengths during late August and September. Moreover, it is not possible to make up for late bermudagrass planting by overseeding

in the fall with perennial ryegrass. In fact, the strong competition for space, water, and nutrients resulting from fall overseeding is so detrimental to young bermudagrass that the cost of complete reestablishment the following summer should automatically be factored into the budget.

By contrast, the planting window for cool-season grasses is better defined by the temperature of the soil just beneath the surface. More specifically, the optimal soil temperature for the germination of most cool-season grasses falls somewhere in the range of 60°F to 80°F. In keeping with this range, the seeding of creeping bentgrass in northern climates, for example, should be scheduled in late August and completed no later than late September. If delayed until October or, worse yet, November, soil temperatures in the 50s will likely prevent the creeping bentgrass seedlings from maturing before the onset of winter, thus reducing their odds of survival.

By increasing the soil temperature with either fabric or plastic covers, there are special situations in which the planting window for cool-season grasses can be expanded into late fall. However, to prevent rampant disease infection under the covers, the buildup of excessive heat on sunny afternoons must be continuously monitored. Additionally, the covers must be periodically removed to keep the turf mowed on a regular schedule. Because of the expense associated with handling covers on a frequent basis, their use is typically limited to greens and tees.



Fabric covers can extend the planting window for cool-season grasses. Special care is required to prevent rampant disease outbreaks that can occur under the covers.

Another popular, but largely unsuccessful, means of extending the planting window is to significantly increase the seeding rate. The downside of using increased seeding rates is that seedlings are forced to compete for limited space, water, and nutrients. In turn, this competition produces weak plants that have a spindly structure and are more apt to become terminally infected by destructive fungal pathogens.



Planting bermudagrass sprigs during late spring through midsummer is essential to their successful establishment and grow-in.

Using seeding rates lower than recommended also can lead to problems. By establishing a sub-optimal number of seedlings per unit area, the turf stand will require more time to develop a dense canopy and can become severely eroded. An excellent source of information for correct seeding rates by climatic zone and species is the book *Turf Management for Golf Courses*, Second Edition by Dr. James B. Beard and the USGA Green Section.

There are also drawbacks to establishing bermudagrass with abnormal sprigging rates. Higher than recommended rates are simply a waste of money because properly managed sprigs will develop into a dense stand of turf in a short length of time. Lower than recommended rates will require too much time to develop into a dense stand and, again, become subject to severe erosion. The only possible exception might be to use a higher, but not excessive, sprigging rate when establishing warm-season grasses near the end of their proper planting window.

While on the subject of sprigging warm-season grasses, it is important to shed light on bushel measurement. As regulated by the National Institute of Standards and Technology, a bushel has a volume equal to 1.244 cubic feet and is referred to as a U.S. bushel. Because the U.S. bushel is not used as the standard measurement in all parts of the country, however, there is confusion from time to time regarding the wording of some sprigging recommendations. For example, a Georgia bushel is approximately five times and a Texas bushel is approximately two times the volume of a U.S. bushel. Furthermore, for some fine-textured varieties, such as Tifdwarf and Tifeagle, the small stolon size can also increase the number of sprigs in a bushel by as much as 25%.

To avoid problems during establishment, it goes without saying that the measurement of a bushel should be clearly defined in all construction contracts. Maybe the best way to avoid confusion is to simply state the sprigging rate in terms of live sprigs per square foot, e.g., a minimum of seven to ten live sprigs per square foot.

To complement this discussion about planting windows, it is also wise to consider the grow-in period. It is common in the turf industry to think of the grow-in period as a time frame of approximately four to six months, depending on location and grass type. However, the specific months that are included in this time frame must be considered. Four to six months is usually adequate, assuming the weather is favorable for vigorous growth. If December, January, and February are included in the six-month time frame, then the grow-in period should be closer to seven to nine months. This is further magnified when planting windows are pushed closer to winter dormancy or summer heat stress.

In the planning phase of every new construction or major renovation project, it is always critical to account for the proper planting window. When golfers, developers, and/or owners view the proper planting window as a peephole of opportunity instead of a broad panorama of endless possibilities, a more rapid and successful grow-in will result. This, of course, equates to better turf, an earlier opening date, and greater profits.

*BUD WHITE is the senior agronomist for the Mid-Continent Region and has worked with golf course superintendents on more than 200 course construction/major renovation projects.*