
TURFGRASS WINTER OVERSEEDING SYSTEM

The following is a summary of findings generated from an eight-year turfgrass research program conducted by Dr. James B Beard at Texas A&M University. Primary emphasis was on winter overseeding of cool-season turfgrasses onto bermudagrass (*Cynodon dactylon* x *C. transvaalensis*) putting greens. Twenty-eight distinct field experiments were conducted, mostly in College Station, Texas at the TAMU Turfgrass Field Research Laboratory, with some studies conducted in Corpus Christi, Dallas, Houston, and San Antonio, Texas, USA.

Summer Turfgrass Preparation:

A cultural system was developed where via season-long vertical cutting for thatch control, followed by coring and fertilization at least one month prior to the projected overseeding date, the actual overseeding and topdressing operations could be accomplished on a relatively undisturbed turf surface. Thus, the turf facility is withheld from play for only a 24-hour period.

The warm-season turfgrasses develop low-temperature leaf discoloration or chill stress injury at canopy temperatures of 13 to 16°C (55 to 60°F), depending on the species. For a 3- to 4-week period prior to low-temperature discoloration, the turfgrass cultural strategy should be to maximize carbohydrate accumulation. A visual indicator that this has been achieved is plump, health rhizomes and stolons.

Seeding Date Prediction Model:

A biological prediction model for the optimum winter overseeding window has been established. It is the period when the soil temperature at a 100 mm (4-inch) depth is between 22 and 26°C (72 and 78°F.).

Species/Cultivar Blend Selection:

The preferred turfgrass community for winter overseeding of putting greens involves either a

blend of 3 to 4 improved perennial ryegrass (*Lolium perenne*) cultivars or a mixture involving an 80% by weight blend of improved perennial ryegrass (*Lolium perenne*) cultivars and 20% by weight of an improved rough bluegrass (*Poa trivialis*) cultivar.

Seeding Rate:

The preferred seeding rate for putting greens has been established in the range of 15 to 17.5 kg per 100 m² (30 to 35 lbs. per 1,000 sq. ft.) for a perennial ryegrass (*Lolium perenne*) blend. For sports fields and fairways where a green turf cover and initial wear tolerance are desired during the first month involves a minimum seeding rate of 10 kg per 100 m² (20 lbs. per 1,000 sq. ft.) for a perennial ryegrass (*Lolium perenne*) blend.

Annual Bluegrass Control:

Fenarimol (Rubigan®) has been shown to be the first herbicide that will provide selective, preemergence control of annual bluegrass (*Poa annua*) in winter overseeded perennial ryegrass (*Lolium perenne*) - rough bluegrass (*Poa trivialis*) turfs with a dormant bermudagrass (*Cynodon* spp.) base turf.

Spring Transition Enhancement:

Detailed studies indicate that the preferred procedure for proper spring transition back to the warm-season turfgrass is achieved by manipulating the cultural system. This involves (a) relatively close mowing, (b) a high nitrogen fertility level, and (c) modest weekly vertical cutting during the warm-season turfgrass shoot greenup period when soil temperatures at a 100 mm (4 inch) depth approach 18°C (64°F). Bermudagrass (*Cynodon* spp.) does not tolerate shade. Thus, this combination ensures sunlight penetration through the winter overseeded canopy to the bermudagrass (*Cynodon* spp.), thereby stimulating spring greenup. Techniques such as withholding water are ineffective and can enhance death of the bermudagrass (*Cynodon* spp.), especially when spring root decline (SRD) occurs.