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# DR. JAMES B. BEARD

## TURFGRASS RESEARCH REVIEW

### OVERSEEDING: WHICH GRASSES ARE BEST

**1971 overseeding results in south Florida.** A. E. Dudeck and E. O. Burt. *Florida Turf*. 4 (5):3-6. (from the University of Florida Agricultural Research Center, Fort Lauderdale, Fla. 33314).

The objective of this investigation was to evaluate monostands and polystands of various cool season turfgrasses for use in overseeding dormant bermudagrass putting greens under the conditions of southern Florida. Eighteen individual cool season turfgrasses and six cool season turfgrass mixtures were evaluated. The specific cultivars evaluated included (a) Lucerne, Manhattan, Medalist 2 and Pennfine perennial ryegrass, (b) Italian ryegrass, (c) Park, Prato and Primo Kentucky bluegrass, (d) Pennlawn red fescue and (e) Dawson chewings fescue. The ryegrasses were seeded at 45 pounds, the fine leafed fescues at 20 pounds and the Kentucky bluegrasses at 10 pounds per 1,000 square feet.

The seedings were made December 16th onto a semi-dormant Tifdwarf bermudagrass green. Replicated plots of 25 square feet in size were utilized. The overseeding procedures included extensive vertical mowing, four times over the area in four different directions. This was followed by seeding. Subsequently, the green was top-dressed sufficiently to cover the seed and lightly dragged with the back of a rake.

The cultural system following planting included daily mowing at one-quarter inch. The area received an initial fertilization of 16-4-8 containing secondary and trace elements. Subsequently, ammonium sulfate and urea were applied alternately at

monthly intervals. All fertilizer applications were made at an equivalent rate of one pound nitrogen per 1,000 square feet. Preventive fungicide applications were made at five-day intervals during the initial 30-day establishment period. An alternating selection of fungicides was used to provide broad disease control.

The various overseeding treatments utilized were evaluated in terms of establishment rate, color, leaf texture, mowing quality, vertical shoot growth rate, disease proneness and effectiveness of spring transition back to bermudagrass.

The results of this study will be discussed in terms of each specific type of data evaluated. First, the establishment rate. The ryegrass possessed the most rapid establishment rate with no significant differences being observed among the various cultivars. No differences were observed between the Kentucky bluegrasses and fine leafed fescues during the first week. Subsequently, the fescues rated intermediate in establishment whereas the Kentucky bluegrasses were slowest. Among cultivars of these species, Park was superior to Prato and Primo, whereas Dawson ranked superior to Pennlawn.

Thirty eight golf course superintendents from South Florida visually rated these experimental plots for turfgrass quality five weeks after seeding. As a group, the ryegrasses ranked superior along with those mixtures containing high percentages of ryegrass. The Kentucky bluegrasses ranked lowest with the fine leafed fescues being in the intermediate range. Italian ryegrass ranked poorer than the perennial ryegrass cultivars.

Vertical shoot growth measurements were made by collecting clipping weights approximately 10 weeks

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after seeding. Among the ryegrasses, Italian ryegrass produced the most shoot growth whereas Pennfine perennial ryegrass had the slowest vertical shoot growth rate of the ryegrasses. As a group, the Kentucky bluegrasses and fine leafed fescues had a slower vertical shoot growth rate than the ryegrasses. Individually, Pennlawn red fescue had the highest vertical shoot growth rate of these two species ranking comparable to Pennfine perennial ryegrass.

The ryegrasses proved quite difficult to grow toward the latter part of the winter growing season. The tips of the cut leaves tended to be shredded, which produced a grayish-white cast over the plots. This resulted in a substantial reduction in turfgrass quality in both April and May on those plots containing ryegrass. However, there were several ryegrass cultivars that had acceptable mowing quality during this period. Those of particular note were Manhattan and Pennfine perennial ryegrasses.

The transition from the cool season turfs to bermudagrass in late spring and early summer was quite poor for those plots containing monostands or polystands where the ryegrasses predominated. Here again there was one exception. Specifically, Pennfine perennial ryegrass tended to persist substantially longer than the other ryegrasses ranking comparable to Park and Prato Kentucky bluegrass. The fine leafed fescues ranked intermediate in favorable spring transition, whereas the Kentucky bluegrasses persisted for the longest time.

The authors concluded that the best approach to winter overseeding of bermudagrass greens in south Florida was the use of a compatible mixture, possibly including blends of the better ranking cultivars. They do not specify a mixture whose composition of cultivars would be preferred.

*Comments:* Winter overseeding involves the planting of cool season turfgrasses into warm season turfs to provide a green turf during the winter period when the warm season species are normally brown and dormant. This winter overseeding practice is normally achieved sometime during the fall period. The alternative to winter overseeding of dormant turfs involves the application of a colorant, preferably a pigment type material. This

approach is most effectively utilized on turfgrass areas where the intensity of traffic does not result in severe wear and damage to the turf. Winter overseeding of cool season species is preferred where traffic and damage necessitate a certain degree of recuperative potential during the winter period.

The characteristics desired in a cool season turfgrass seed mixture for use in winter overseeding include (a) rapid establishment to provide good transition from a green, warm season turf to a green, actively growing, cool season turf; (b) good turfgrass quality in terms of color, uniformity, smoothness, and density, and (c) a minimal spring transition period from a green, actively growing cool season turf to a green, actively growing warm season turf.

A mixture of cool season turfgrasses is preferred for use in winter overseeding because no one species or cultivar is available which possesses all the desired qualities. By utilizing a mixture, there is greater genetic diversity and adaptability to the needs of winter overseeding. Specific cool season turfgrass species rank superior in certain characteristics desired for winter overseeding. For example, the ryegrasses and fine leafed fescues provide rapid fall transition and very good wear tolerance. The Kentucky bluegrasses provide better spring transition and improved winter color. The bentgrasses also provide improved spring transition.

The preferred mixture utilized for winter overseeding of greens may vary from location to location throughout the warm climatic region. Thus, it is suggested that the golf course superintendent check the results of experiments conducted in their respective states or regions to determine which species and cultivars are ranking superior in terms of winter overseeding characteristics.

Finally, it is interesting to note the performance of the improved perennial ryegrasses as a new type of cool season turfgrass for use in winter overseeding. Specifically, Manhattan and Pennfine perennial ryegrass possess a more diminutive growth habit, a slower vertical shoot growth rate, improved mowing quality, greater persistence and better color than the classical perennial ryegrasses while still retaining a rapid establishment capability. □

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