

RESEARCH REPORT

COOL SEASON GRASSES

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Hybrid bermudagrasses (*Cynodon Spp.*) are the most widely used turfgrasses for golfgreens in the Southeastern United States. The hybrid bermudagrasses ('Tifgreen' and 'Tifdwarf') become dormant and turn a brownish-gray color when frost occurs. Overseeding these bermudagrasses with a cool-season grass about three weeks before frost is desirable to provide a living green surface, to reduce traffic damage to the dormant bermudagrass, and to insure a more visible target for golfers.

A major problem with overseeding is the transition from bermudagrass to a cool season grass in the fall and back to bermudagrass in the spring. Obtaining a quick cover of overseeded grass in the fall is desirable. Also, gradual death of the cool-season grass the following spring is necessary to allow bermudagrass to develop a dense turf. Bermudagrass normally breaks down dormancy slowly and a mix of cool season grasses with bermudagrass during the early summer provides a semifirm putting surface during the transition period.

We overseeded bermudagrass greens with selected species, mixtures (two or more species mixed together) and blends (several varieties of same species mixed together) of cool-season grasses in the fall and evaluated quality of the turf in the following winter and spring.

A large block of 'Tifgreen' (Tifton 328) bermudagrass sod¹ was divided into plots for overseeding with several species, mixtures and blends of commercially-available and experimental cultivars of cool-season turfgrasses. Plots were 25 feet square and each entry was replicated 4 times. The bermudagrass was not dormant and we removed some thatch and competition before overseeding — by vertical mowing in two directions followed by mowing 1/16 inch below the normal cutting height.

Seed of each species, mixture and blend were preweighed, mixed with moist sand as a carrier, hand seeded on October 15, 1976, worked into the turf by brushing with a stiff-bristle broom and topdressed with about 1/8 inch of masonry sand. Water was applied by sprinkler irrigation 3 times daily until germination was complete and at weekly intervals thereafter. Mowing at a cutting height of 1/2 inch was started 10 days after overseeding and plots were mowed at a

height of 1/4 inch three times each week after the cool-season grasses were well established.

Plots were visually rated for quality at weekly intervals from time of establishment until transition the following spring. Quality was judged to be a function of texture, color, density of stand and uniformity. A quality rating scale of 1 to 10 was used, with 1 lowest, 5 acceptable and 10 highest.

Results

'Gulf' annual ryegrass became established faster than the other grasses and turf quality was acceptable in October (Table 1). However, low soil and air temperatures resulted in unacceptable turf quality (color fading and stand thinning) in November and for the remainder of the growing season.

The perennial ryegrasses produced acceptable turf later than the annual ryegrass but quality remained acceptable until spring transition, when the quality of all overseeded plots declined. Low temperatures affected the quality of all perennial ryegrasses slightly but they did not exhibit the loss of green color observed in the annual ryegrass and fine-leaved fescues.

Quality of turf produced by the fine-leaved fescues generally was unacceptable. 'Dawson' was producing acceptable turf by mid-November. However, it went "off color" in January and did not recover. The extreme cold affected the other fine-leaved fescues similarly. All fine-leaved fescues faded out fast in the spring transition and brown areas were observed.

Quality of turf produced by all mixtures was acceptable by late November and remained acceptable until spring transition. Differences in quality of turf were negligible.

'Medalist 2,' 'Medalist 5' and 'CBS' blends produced acceptable turf in November. Turf quality was not reduced appreciably by extreme cold and continued acceptable until spring transition. Transition to bermudagrass was very good.

¹A plot that had been maintained as a golf putting green on the MAFES Plant Science Farm at Mississippi State University.

Table 1. Quality Ratings of Selected Species, Blends and Mixtures of Cool-Season Grasses Overseeded on Bermudagrass, Mississippi State University, Oct. 15, 1976.

Cultivars	Seeding Rate lbs/1000 sq. ft.	Month									
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Ave.
Annual Ryegrass											
Gulf	50	6.0	4.6	4.8	4.8	5.2	4.8	3.8	1.9	3.9	3.9
Perennial Ryegrass											
Derby	40	2.5	5.3	6.3	6.2	6.4	8.0	6.5	3.9	2.3	6.1
Regal	40	1.8	4.5	5.4	5.4	5.9	8.0	7.1	4.8	2.8	5.6
Berdie	40	3.0	5.0	5.6	6.2	6.2	7.9	6.7	4.5	3.0	5.8
Citation	40	2.8	4.8	5.7	5.9	5.8	7.7	6.8	4.4	3.0	5.6
Omega	40	3.3	4.8	5.7	5.8	6.3	7.4	7.0	3.8	2.8	5.6
NK 200	40	2.3	4.7	6.1	5.5	5.3	6.4	6.4	3.4	2.5	5.1
Eton	40	2.5	4.7	5.9	5.2	5.4	7.0	6.6	3.7	2.5	5.3
Pennfine	40	3.8	4.2	6.8	7.2	6.6	8.2	6.9	3.9	2.5	6.1
K5-90	40	2.5	4.9	6.0	7.1	6.4	7.7	6.6	2.8	2.3	5.5
K5-92	40	3.5	4.9	6.1	6.6	6.4	7.9	5.9	3.2	2.3	5.6
Loretta	40	2.8	4.3	5.7	5.5	5.8	6.9	6.4	4.2	3.0	5.4
Caravette	40	2.0	4.8	5.9	6.3	5.1	5.9	6.4	3.6	1.8	5.3
Average		2.7	4.7	5.9	6.1	6.0	7.4	6.6	3.9	2.6	
Fine Fescues											
Syn W.	30	1.5	3.6	4.7	3.9	4.9	3.7	4.1	3.5	3.9	
Dawson	30	1.5	4.8	5.5	4.1	4.6	6.2	5.4	3.1	2.3	4.5
Kinnington	30	1.0	3.0	4.0	3.3	2.8	3.3	3.0	2.6	2.3	3.1
Average		1.3	3.8	4.7	3.8	3.7	4.8	4.0	3.3	2.7	
Poa trivialis											
Sabre	12	1.3	3.3	5.1	5.9	6.2	7.0	6.3	2.9	2.0	5.0
Mixtures											
Yorktown (50%), Diplomat (20%), Jamestown (30%)	35	1.5	4.2	5.6	6.1	6.0	7.3	6.6	3.7	2.3	5.3
Diplomat (60%), Jamestown (40%)	35	1.5	4.7	5.7	5.3	5.9	7.1	5.8	4.1	2.5	4.9
Yorktown (60%), Jamestown (40%)	40	1.3	4.2	5.4	5.8	5.8	7.1	6.3	3.3	2.3	5.1
Synd-1 (60%), Jamestown (40%)	35	1.3	4.4	5.7	5.3	6.1	7.2	6.4	4.0	2.5	5.3
Diplomat (35%), Synd-1 (35%), Jamestown (30%)	35	1.3	4.3	5.2	5.3	5.8	7.1	6.3	4.1	2.8	5.2
Dixie green (60%), Sabre (40%)	18	1.5	4.2	5.2	6.3	6.1	7.7	6.8	3.6	2.0	5.4
Derby (80%), Sabre (20%)	20	1.3	4.0	5.3	6.1	6.1	7.7	6.7	3.9	2.0	5.5
Diplomat (50%), Yorktown (20%), Jamestown (30%)	35	1.0	4.3	5.1	5.1	5.9	7.3	6.4	4.1	2.3	5.2
Dixie green	40	2.3	5.1	6.3	6.4	6.4	7.8	6.4	4.4	2.3	5.3
Winter Green I®	40	2.0	4.4	5.6	5.8	5.4	6.1	6.4	3.7	2.3	5.1
Medalist 400®	40	3.3	4.6	5.8	6.1	5.9	6.7	6.1	4.1	2.5	5.4
Medalist 200®	40	3.5	4.8	5.8	5.9	5.7	6.8	6.4	4.1	2.5	5.4
Average		1.8	4.4	5.6	5.8	5.9	7.2	6.4	3.9	2.4	
Blends											
OS 601®	40	2.3	4.8	5.9	6.5	5.5	6.9	6.6	4.0	1.8	5.1
OS 603®	40	1.8	4.4	5.4	5.9	5.7	6.9	6.4	3.5	1.8	5.1
CBS blend®	40	3.0	5.2	6.1	6.6	6.3	7.8	7.1	4.4	3.3	5.9
Medalist ⁵ ®	40	3.0	5.1	6.2	6.1	6.0	7.5	4.1	3.8	2.0	5.6
Medalist ⁴ ®	40	3.3	4.7	5.8	5.8	6.2	7.7	6.9	4.0	2.8	5.6
Medalist ² ®	40	3.8	5.2	5.6	6.1	6.1	7.2	5.9	3.0	1.8	5.3
Diplomat (50%), Synd-1 (50%)	40	1.5	4.7	5.3	5.8	6.4	7.5	6.6	4.4	2.5	5.5
Yorktown (50%), Synd-1 (50%)	40	1.5	4.9	5.3	5.6	6.1	7.6	6.5	4.2	2.3	5.5
Yorktown (50%), Diplomat (50%)	40	1.3	4.2	5.4	5.8	5.7	7.1	6.3	4.1	2.3	5.1
Average		2.4	4.8	5.7	6.0	6.0	7.4	6.3	3.9	2.3	