Green Winter Color for Warm Season Lawns from Overseeding with Cool Season Species

By David E. Longer

Proven warm season grasses such as hybrid bermudagrass (Cynodon dactylon L.) and zoysia (Zoysia japonica Steud.) have become the preferred lawn species for manysouthern home owners because of their ability to withstand prolonged periods of heat and drought and increased wear. Improved zoysia cultivars have better disease resistance and improved shade tolerance than their predecessors.

Need for overseeding

Major drawbacks of zoysia and bermudagrass are that they must be established vegetatively, i.e., by laying sod, sprigging or plugging, and the aboveground leaf mass turns an aesthetically unpleasant straw color with onset of cold weather.

Considerable research has been done on fall overseeding of cool season species into established cool season turfs. Seeding tall fescue in the fall into an existing tall fescue lawn to enhance turf density in the fall and the following spring and summer seasons is a well known practice.

Less is known about overseeding cool season species into established warm season lawns. For this type of system to appeal to homeowners, it must be effective in establishing year-round green turf color, something that is fairly inexpensive and relatively simple to accomplish.

Overseeding with cool-season species

A series of experiments were initiated at the Main Agricultural Experiment Station (MAES) in Fayetteville, AR, in 1998 to determine if cool season turfgrass species could be overseeded into established warm season lawns and provide year long, green ground cover with very low labor and capital inputs.

The cool season grasses were blends of several species and were obtained from the former Loft's Seed Co. The blend known as Triplex consisted of equal portions of three perennial ryegrass (Lolium perrene L.) cultivars: 'Palmer III;' 'Prelude III;' and 'Repel III.'

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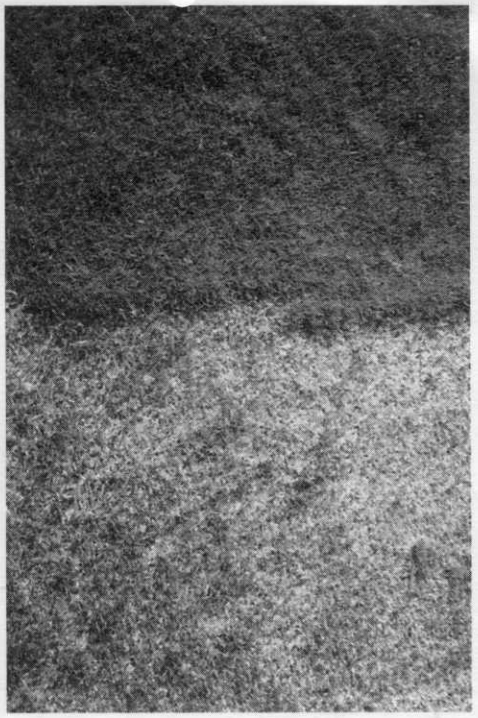
The other blend known as "Athletic Field Mix" consisted of 10% perennial ryegrass, Palmer III, 10% of Kentucky bluegrass (Poa pratensis L.), 'Preakness' and 80% tall fescue (Festuca arundinacea Schreb.) 'Rebel III.'

In addition to the two blends, other treatments included two planting dates: mid-September and mid-October; and scalping or not scalping the warm season species prior to overseeding. Seeding rate for each blend at each planting date was 5 lb./1000 sq. ft. and each plot was fertilized (19-19-19) at the rate of 1 lb./1000 sq. ft. two weeks after seedling establishment to promote good shoot and root growth throughout the fall.

All other management inputs, such as weed control, were targeted toward the period when the warm season species were actively growing. All test plots were evaluated monthly for color, quality, density and percent weediness

The field tests were established as a split, split-plot with blends being the main split

Analysis indicates that cool season turfgrass species may be able to provide aesthetically pleasing winter color when established in warm season lawns.



and planting date, and preplant scalping as subsequent splits.

Immediately following both seedings, plots were irrigated daily until emergence, which occurred in each plot within eight to 12 days. All plots were qualitatively rated each month, and mowed weekly to 0.75 in. during periods of active growth. Final assessments were based on monthly values of turf color, density, quality and weediness.

Results of the experiment

Zoysia and bermudagrass main plots were separate from each other and analyzed as separate experiments. The treatment plots were established within each main plot.

Zoysia plots showed no treatment differences for either planting date or overseeding species. All overseeding treatment combinations provided an improvement in winter turf color when compared to the control plots, which were not overseeded (Figure 1). Bermudagrass seemed to be more responsive to overseeding by cool season species.

TABLE 1. Density values for bermudagrass overseeded with cool season turf grass blends. Ratings for months of Dec., Mar., and May. Density ratings (†) (Rating scale 1-9, 9= best).

		Blends					
		Triplex			Athletic. Field Mix		
Planting Date	Preplant Scalping	Dec.	Mar.	May	Dec.	Mar.	May
Early	No	7.0 (†)	6.0	7.0	9.0	7.7	7.7
	Yes	8.3	7.3	7.7	9.0	7.3	7.7
	LSD (0.05)	1.2	1.2	n.s	n.s	n.s	n.s
Late	No	6.7	7.7	7.3	6.0	7.7	7.3
	Yes	6.3	7.0	6.7	6.7	7.7	7.3

† Denotes in columns not followed by same letters are significantly different (LSD $p<0.05$)

Turfgrass density was increased in the Triplex blend for the December and March evaluation periods in the early plantings that were scalped prior to overseeding. (Table 1.) The density values were generally higher in early plantings for both blends but not all dates were statistically significant.

The Athletic Field Mix blend, averaged for early and late seeding dates, was superior to Triplex in color evaluations

Turfgrass color was greatly influenced by overseeding, as would logically be expected, since the bermudagrass had entered winter dormancy and achieved the characteristic straw color by the time the plots were evaluated.

Both blends showed large differences in the December evaluations for turf color in

the early seeded plots. Scalping treatments proved mostly ineffective.

Early seeding advantages had disappeared by the time the plots were evaluated in March and May when the later seeding dates had caught up (Table 2). The Athletic Field Mix blend, averaged for early and late seeding dates, was superior to Triplex in color evaluations in March and was still better in May, but not significantly better.

Since the control bermudagrass plots would have been rated zero because of dormancy, all overseeding treatments were an improvement over that. The weediness found in the bermudagrass study was due largely to the relatively low density of the established bermudagrass turf prior to overseeding. The early overseeded cool season species were able to establish and compete favorably with the winter weeds, but the late planted cool season species were not.

Percent weediness values were as much as 15% greater in the late planted treatments when compared with the early seeded plots in the March evaluation period. (Table 3).

Getting good color

Visual and qualitative analysis indicate that cool season turfgrass species may be able to provide aesthetically pleasing winter

TABLE 2. Color values for bermudagrass overseeded with cool season turf grass blends. Ratings given for December, March., and May. (Rating scale 1-9, 9= best).

		Blends					
		Triplex			Athletic. Field Mix		
Date	Scalped	Dec.	Mar.	May	Dec.	Mar.	May
Early	No	8.7 (†)	6.0	6.7	9.0a	7.0	7.3
	Yes	8.0a	7.0	7.0	8.0a	7.7	7.3
Late	No	6.3b	7.3	7.0	6.0b	7.5	7.3
	Yes	6.3b	7.3	6.7	6.3b	7.7	7.7
Mean		6.9 (‡)	n.s	n.s	7.5	n.s	n.s

† Denotes in columns not followed by same letters are significantly different (LSD $p<0.05$)

‡ March mean values compared in rows [SD - 0.33 ($p<0.05$)]

TABLE 3. Percent weediness values for bermudagrass overseeded with cool season turfgrass blends. Ratings given for Dec., Mar,. and May, 1998.

	% Weediness		
Date	December	March.	May
Early	1.5	0	0
Late	4.5	14.8	7.2
LSD ($p< 0.05$)	2.7	7.5	3.4

color when established in warm season lawns. All overseeded plots were no lower than 6 (9 is best) on the color scale and much better than the zoysia and bermudagrass control plots in terms of appearance.

Early planting (mid-September) provided superior density and color ratings in many cases when compared to the mid-October seedings. Bermudagrass, in general, seemed to be more responsive than zoysiagrass to overseeding of cool season species. Early seeded bermudagrass plots were nearly free of winter or cool season weeds, whereas the later overseeding did experience some cool season weed infestation.

Overseeding of warm season lawns with cool season blends consisting of perennial ryegrass, tall fescue and Kentucky bluegrass provided an inexpensive, low maintenance green lawn throughout the winter months in Northwest Arkansas. This process may be worthwhile for warm season lawns throughout the "transition zone."

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