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Benefits of Winter Overseeding on Dormant Bermudagrass

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Overseeding ryegrass or other cool season turfgrass species on dormant bermudagrass makes a beautiful sports field, golf course or home lawn during the winter, so people often assume the only reason to overseed is cosmetic. This can be an important reason for overseeding but there are many additional agronomic reasons to overseed. For each situation the benefits must be balanced against any detriments to make a decision on whether or not to overseed.

Bermudagrass with overseeded ryegrass is much more wear tolerant than the dormant bermudagrass alone. Research at the University of Tennessee by Thoms et al (2006), as shown in Figure 1, demonstrated that bermudagrass sports fields that were overseeded could tolerate up to twice the amount of traffic as non-overseeded bermudagrass, while maintaining 90% turf cover. This is the critical factor in non-overseeded bermudagrass, it cannot take as much wear as overseeded bermudagrass. Thoms et al (2009) have also demonstrated the benefits of using high seeding rates of perennial ryegrass on sports fields for improved wear tolerance with increased turf coverage at rates up to 800 lbs/acre (897 kg/ha). As the level of wear increases, the non-overseeded bermudagrass takes a longer time to break dormancy so repair slows even more. Stewart et al (2008) demonstrated that late winter or early spring traffic on dormant bermudagrass on a sports field delayed spring green-up significantly. Worn fields also have a greater potential for player injuries. University of Florida (Miller et al, 2005) in their 2004–2005 Overseeding Trial measured the shear strength of non-overseeded TifSport bermudagrass compared with various cultivars and species overseeded onto the bermudagrass (Table 1). In all cases, except when Gulf annual ryegrass was used, the bermudagrass with overseeded grass had significantly more shear strength than the non-overseeded bermudagrass. Although a limited number of perennial ryegrass varieties were in this trial it emphasizes that improved perennial and intermediate ryegrasses can contribute to shear strength. This means it is safer for players on sports fields and there will be reduced divots on fairways. If a sports field has significant use in the fall, winter or spring when the bermudagrass is dormant overseeding is recommended. The cost involved is minimal when compared to player safety. On golf courses care must be taken to prevent damage in high traffic areas and where golf carts are allowed on dormant bermudagrass. Overseeded

bermudagrass suffers far less damage.

In resort areas or areas with winter residents the aesthetics of an overseeded golf course and expectations of the golfers may become the overriding concern. Individual courses have reduced the area overseeded, in some cases with success, but others find that the expectation, when competing for the winter golf dollar is to play on green grass. One way a course can evaluate any change in maintenance practices is to survey players, both current ones and ones who have not returned, if possible. Courses must also decide when their primary play takes place. Often agronomists state that you will have a stronger bermudagrass stand in the summer without winter overseeding, but if only a fraction of your play is during the summer should summer turf strength be the deciding factor?



If a golf course uses effluent water and must use a certain number of gallons a year, having an overseeded course enables more water to be absorbed and used during the winter. Dormant bermudagrass does not absorb water, making soil evaporation or drainage the only way for water to leave the surface. In poor drainage areas and with rainfall, this lack of bermudagrass growth can lead to loss of stand and makes it easier for compaction injury to occur. Dormant bermudagrass is also not able to absorb nutrients such as nitrogen and phosphorus or pesticides so leaching is more likely to occur which can contaminate groundwater. Care must be taken not to apply fertilizer products shortly before dormancy if the bermuda is not going to be overseeded.

Divots do not repair on dormant bermudagrass. These areas should be filled with soil or sand to continue to provide a smooth surface. During the winter, when the bermudagrass is fully dormant, glyphosate can be used to remove weeds such as annual bluegrass that may come up in these areas. Care must be taken that the bermuda is totally dormant before using this strategy. Problems can occur in the spring as the bermudagrass greens up again it may become difficult to control these weeds. In an overseeded situation you can repair the divots with seed during play to maintain a more uniform surface.

The choice of species for overseeding are many, depending on the site and primary use. Annual ryegrass (*Lolium multiflorum*) is the cheapest seed but is pale green and requires much more mowing, especially in the spring. However, it rapidly dies in the spring leaving openings for the bermudagrass to regenerate. TransEze and TransCend transitional or intermediate ryegrasses (*Lolium hybridum*) with improved turf qualities have been developed that perform more like the older perennial ryegrasses and also transition better. These perform best when combined with perennial ryegrasses in blends such as Champion EZEE and Playmate EZEE, to take advantage of both species traits. Champion GQ, Playmate and Magnum Gold turf-type perennial ryegrasses blends are the standard for overseeding sports fields, golf course fairways and tees and home lawns. Turfgrass breeders have

developed dark green, fine textured, high density perennial ryegrass cultivars with improved mowing quality and disease resistance. Some varieties have been developed with improved cool weather growth, making them ideally suited to winter overseed uses. These new ryegrasses often have improved heat tolerance, which may make them harder to remove at spring transition time.

Table 2 demonstrates the benefits of adding different species into your overseeding mixtures for more winter active growth or quicker transition. SR 5130 or Silhouette Chewings fescue (*Festuca rubra ssp. commutata*) can be mixed with perennial ryegrass for a more winter active and upright growth and to improve the transition of the stand. Chewings fescue can also be used, along with Shoreline slender creeping red fescue (*Festuca rubra ssp. litoralis*), in areas with high salts for rapid blight (*Labyrinthula terrestris*) resistance. These fine fescues can also be used on greens alone or in combination with ryegrass, Maximum, Quasar or Pulsar rough bluegrass (*Poa trivialis*), SR 7200 velvet bentgrass (*Agrostis canina*) and SR 7150 colonial bentgrass (*Agrostis capillaris*). Providence, Brighton, Sandhill and MacKenzie creeping bentgrass (*Agrostis stolonifera*) can also be used as a greens overseeding grass in areas with high salts or with rapid blight.

Transitioning back to bermudagrass can be accomplished by the use of selective herbicides for transition or by cultural management. In transition zone areas the use of herbicides as a transition aid is recommended. Horgan and Yelverton (2001) researched many cultural techniques to improve transition and found inconsistent results in individual years, with weather contributing much to the timing of transition. Other environments may see a more consistent effect of management on transition. In higher cut turf the best recommendation is to scalp the ryegrass to allow more sunlight into the bermudagrass and fertilize well once the bermudagrass is growing. Even on sports turf, greens or tees reducing the height of cut can help reduce the overseeded grass and encourage the bermudagrass regrowth.

Overseeding has both positives and negatives. The utilization is dependent on the site and the clientele. Remember to look at all facets before you make the decision on whether to overseed and with what species.

References

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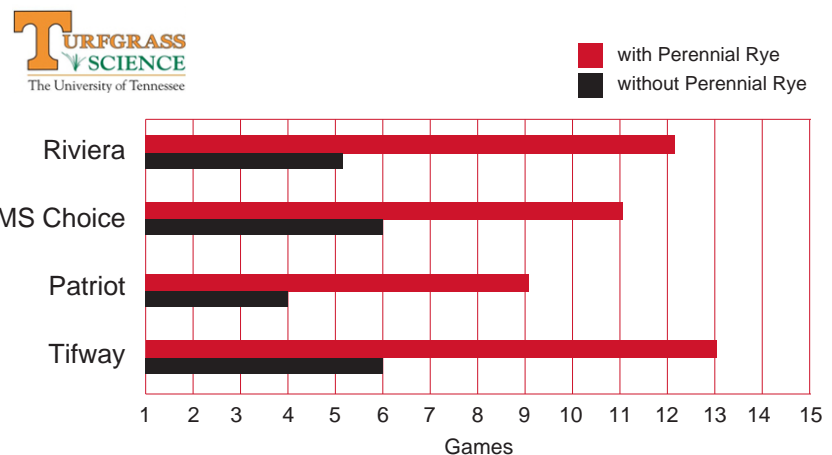
Table 1: Average shear strength estimates based on resistance in kilograms to horizontal force after overseeding TifSport on November 4, 2004. University of Florida data. Shear strength on day 140 (March 2003).

Turfgrass	Overseed Species	Shear Strength (kg force)	Turfgrass	Overseed Species	Shear Strength (kg force)
Sunshine 2	PR	96.00	SS2205	PR/Interm	82.50
Applaud	PR	93.00	LHR205	Interm. Rye	78.75
Prowler II	PR	90.50	IG2	PR	78.50
B-TS-04	PR	89.50	Overture	PR	77.50
ProSelect QT	PR	86.50	Gulf	Annual Rye	62.00
Eagle Blend	PR	85.00	Untreated	None	59.25
Promise 2	PR	84.75	LSD @ 5%		15.29

Table 2: University of Arizona Overseeding trials 2006-2009

Entry	Species	Feb Quality	May Quality	Mean Quality
Champion GQ	Perennial rye blend	7.5	7.8	6.8
Champion RB	Slender creeping red/PR	7.8	6.3	6.8
Champion Fine	Chewings fescue/PR	7.3	7.5	6.6
Champion STF	Strong creeping red/PR	8.0	5.3	6.5
Penguin 2	Perennial rye	7.0	6.8	6.5
Par 5	Perennial rye blend	7.3	6.5	6.5
Blast Off	Perennial rye blend	7.3	6.5	6.4
PhD	Perennial rye blend	7.5	6.0	6.2
League Master	Perennial rye blend	6.8	7.0	6.1
Standard Entry	Perennial rye	6.8	5.8	6.0
Gulf	Annual rye	4.3	3.8	3.6
Non-seeded	bermudagrass	2.0	3.3	2.6
LSD @ 5%		1.2	1.2	0.8

Figure 1: Number of football games required to get the turf cover to 90% (Knoxville, TN – 2006)



Data from the University of Tennessee – Turf Science Department