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Annual ryegrass seeding rates for high traffic areas

A. Hoiberg, D.D. Minner, R. Krull

Background

Improved varieties of annual ryegrass are now available for overseeding bermudagrass golf course fairways and athletic fields. Because of its rapid germination and fast growth we wanted to determine if annual ryegrass could be used for overseeding intensely trafficked cool season athletic fields. Previously we reported that frequent and higher than normal seeding rates of perennial ryegrass and tall fescue have resulted in more turf cover when grass is planted during traffic. Last year we reported that Panterra annual rye produced more turf cover than perennial rye, tall fescue, and Kentucky bluegrass when seeded and trafficked during the fall football season. When seeded in the spring annual rye turf cover during traffic was similar to perennial ryegrass, however by mid summer annual ryegrass quickly begins to decline and fades away by the end of the summer. Even though it is an annual grass we are interested in its ability to make a permanent turf if seeded at high rates on multiple occasions. There is little information available regarding the traffic tolerance of annual ryegrass.

Objectives

To determine if there is any merit to overseeding intense traffic areas with annual ryegrass to improve turf cover during traffic. Specifically we wanted to determine the seeding rate beyond which there was no advantage to add more seed. Also, should the seed be applied in a single application at the beginning of the season or seeded multiple times through out the season.

Methods

Annual ryegrass seeding rates were 5, 10, 15, 30, 45, 60, 90, 150 lbs/1000 sqft. Traffic was applied at 1, 2, 4, 8, 12, and 20 passes per week with the GA-SWC traffic simulator from Sept to Nov 2006. One pass of the traffic simulator equals approximately one high school football game.

Results

The fall seeded annual ryegrass established quickly, persisted through the winter, and produced beneficial turf during the spring, but began to decline during the mid summer heat. At this time it appears that 60 lbs/1000 sqft may be the breakpoint threshold where additional seed does not provide additional turf cover when grass is established during traffic. In all of our other seeding trials that involved traffic we never experienced a situation of too much seedling competition, however, with 90 lbs of annual ryegrass/1000 sqft we had an excessive amount to spindly seedlings that were easily killed by traffic. In 2006, we experience rain immediately after planting and no traffic was applied until 10 days after planting. Therefore, in the absence of traffic and if all of the seed is able to germinate, then seeding at rates at 90 lbs/1000sqft and higher with annual ryegrass could lead to seedlings that are more susceptible to traffic injury and eventually a reduced amount of turf cover.

Table 1. Annual Ryegrass cover on 16 Nov 2007 for 8 sowing rates, 2 seeding regimes, and 5 levels of traffic when seeded into bare soil. Traffic began 1 September and continued for 8 weeks.

	Single Seeding					Multiple Seeding		
	Traffic Rate (passes or games/wk)							
	2	4	8	12	16		4	12
Sowing Rate	Turf cover (%)							
5	75	50	7	1	1		23	1
10	84	63	12	2	1		30	1
15	90	63	15	2	1		38	1
30	95	73	22	7	3		62	5
45	92	72	25	6	1		70	7
60	96	75	25	6	2		77	10
90	94	73	25	10	2		85	12
150	90	65	20	5	4		87	22