Athletic Field Research - 1989

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Several experiments were initiated during the 1989 growing season involving athletic field type research. While it may be a bit premature for many of the results, a few preliminary findings can be presented.

A study was initiated in the spring to determine the best perennial ryegrass/Kentucky bluegrass mix. An interesting twist was the inclusion of Kentucky bluegrass seed that had been primed with a new process being developed by Chemlawn. The idea is that if a slower germinating species such as Kentucky bluegrass can be enhanced to germinate on the same time frame as perennial ryegrass, Kentucky bluegrass can better compete for critical elements such as nutrients, moisture and light. The following table shows the results of the priming after one growing season.

Table 1. % Kentucky bluegrass in stand after one growing season.

	% Perennial ryegrass/Kentucky bluegrass			
Treatment	20/80	35/65	50/50	80/20
Primed bluegrass	47.9	47.4	31.6	16.9
Unprimed bluegrass	36.1	21.9	31.8	12.0

The priming process was effective at increasing Kentucky bluegrass percentages of the mixes that had lower percentages of perennial ryegrass. As the perennial ryegrass percentage increased, the effectiveness of the priming process was negated. Thus the use of seed priming can be effective in increasing Kentucky bluegrass percentages. This study will also be continued for the next two growing seasons so to evaluate the long term effects of core cultivation on surface hardness. With the addition of 10 acres at the Hancock Turf Research Center, we will be able to establish athletic field plots for research purposes. This same study will continue for the next two seasons as the effects of athletic field-type of wear on these mixes are evaluated.

A second study was initiated also in the spring to evaluate various core cultivation techniques and their effectiveness on alleviating compaction and decreasing hardness in perennial ryegrass turf. After one season of compaction followed by core cultivation in the late summer, impact absorption measurements were recorded and presented in Table 2.

Table 2. The effect of core cultivation on impact absorption of perennial ryegrass turf 1989.

Core Cultivation Treatment		g-max (g)
1	Deep Tine Aeration (Hallow 0.63" dia)	89
2	Toro (water injection)	98
3	Conventional VOT (2" Centers Hallow 0.50" dia)	84
4	Control	103
	lsd	11

The deep tine and conventional VOT both had significantly lower g-max values than the control. These data solidify the importance of core cultivation for decreasing surface hardness.