

Establishment of Creeping Bentgrass Greens on High Sand Content Soils

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Establishment of creeping bentgrass should be a relatively straight forward process for most turf managers. However, high sand content soils have given many superintendents unexpected problems during establishment. In addition, the push to get new putting greens playable in as short as time as possible has also created problems for superintendents.

Many grow-in programs use very high levels of fertility, particularly nitrogen in order to speed establishment. Fertility programs recommending 1 lb N/1000 ft²(M)/week have become standard practice. Some grow-in programs recommend very high levels of nitrogen at planting in addition to the 1 lbN/M/week. These high levels of nitrogen fertility on high sand content soils will likely lead to high levels of nitrate leaching.

This study is designed to examine several different fertility regimes for their effect upon the speed and quality of establishment and upon the leaching of nitrates and phosphates through these high sand content soils. The plots were seeded to Penncross creeping bentgrass at a rate of 1 lb seed/M on July 28. Plots were fertilized according to the rates and timings displayed in Table 1. Data to be collected will include nitrate and phosphate in the percolate which comes through the green, establishment rate, and turf quality. After the plots reach a height of 1/2", routine mowing will begin. Each plot will be divided in half with one side being aggressively pushed with frequent close mowing while the other half will be allowed to mature before bringing down to greens height.

Table 1. Fertility Regimes for Bentgrass Grow-In.

Treatment #	Initial Treatment		Post-treatments
1	4.444#/M 0-45-0	tilled	0.5#N/M/wk
	7.143#/M 14-28-10	surface	
2	4.444#/M 0-45-0	tilled	0.75#N/M/wk
	7.143#/M 14-28-10	surface	
3	4.444#/M 0-45-0	tilled	1#N/M/wk
	7.143#/M 14-28-10	surface	
4	14.286#/M 14-28-10	surface	0.5#N/M/wk
5	14.286#/M 14-28-10	surface	0.75#N/M/wk
6	14.286#/M 14-28-10	surface	1#N/M/wk
7	7.143#/M 14-28-10	surface	1#N/M/2wk
8	27.895#/M 19-26-5	surface	1#N/M/wk(3wk) (19-26-5)
	6.667#/M 15-0-30	surface	
9	33.333#/M Milorganite	tilled	0.5#N/M/wk
	10.714#/M 14-28-10	surface	
10	33.333#/M Milorganite	tilled	1#N/M/wk
	10.714#/M 14-28-10	surface	
11	30#/M SandAid	tilled	1#N/M/wk
	22.857#/M 14-28-10	surface	
12	60#/M SandAid	tilled	1#N/M/wk
	20.714#/M 14-28-10	surface	
13	4.444#/M 0-45-0	tilled	0.33#N/M/wk(2-4wk) 0.5#N/M/wk(5-7wk) 1#N/M/wk(8...wk)
	7.143#/M 14-28-10	surface	
14	14.286#/M 14-28-10	surface	0.25#N/M MWF(3wk)
15	14.286#/M 14-28-10	surface	1.5#N/M/wk

Treatments with lysimeters: 4, 6, 7, 8, 10, 11, 12, 14, and 15.