

Effect of Nitrogen-Potassium Balance and Irrigation
on the Quality of a Penncross Creeping Bentgrass
Putting Green and on Adelphi Kentucky Bluegrass

A study to evaluate the effect of varying ratios of nitrogen to potash and irrigation program on the quality of a Penncross creeping bentgrass putting green was initiated in 1982 at the Hancock Turfgrass Research Center. Three levels of irrigation will be utilized starting in 1983. Annual nitrogen rates are 0, 2 or 4 pounds annually. In this first year, no unusual results occurred.

A companion study was begun in 1982 on Adelphi Kentucky bluegrass. Irrigation treatments utilized were: a) 20 minutes of irrigation daily at noon; b) 80% of open pan evaporation; and c) on wilt. There were no unusual responses observed other than that the plots receiving daily irrigation were somewhat green through the latter part of the growing season.

Effect of Late Fall Nitrogen on Annual Bluegrass

Fall nitrogen treatments outlined in Table 7 were applied to annual bluegrass turf at the Hancock Turfgrass Research Center mowed at fairway height. This was a cooperative study with 2 students, Kurt Galisdorfer and Jeff Holmes. Application of ferrous sulfate did not improve quality ratings when nitrogen was applied. Nitrogen carriers gave responses as would be expected.

Table 7. Late fall nitrogen fertility study on annual bluegrass at the Hancock Turfgrass Research Center. Three replications. Nitrogen applied at one pound per 1000 square feet.

Treatment		Carrier	Fe SO ₄	Turfgrass quality rating (9=best)		
Date	N rate			Nov 12	Nov 24	Dec 15
lbs/1000		oz/1000				
Oct 18	2	Am. nitrate	-	9.0a ^x	9.0a	9.0a
Oct 18	1	Am. nitrate	-	7.7bc	7.7bc	7.7bc
Oct 18	1	Am. nitrate	3	7.8b	7.5bc	7.2c
Oct 18	1	Am. nitrate	6	7.8b	8.0b	8.0b
Oct 18	1	S.C. urea	-	7.0c	7.2c	7.2c
Oct 18	1	Milorganite	-	5.2d	5.2d	5.2ef
Oct 18	1	UBDU-coarse	-	4.8d	4.8df	4.8f
Oct 18	0	--	3	4.5d	4.5ef	4.5f
Nov 19	2	Am. nitrate	-	5.0d	4.3f	6.2d
Nov 19	1	Am. nitrate	-	4.5d	4.7df	6.0d
Nov 19	1	Am. nitrate	3	4.5d	4.8d	5.7de
Nov 19	1	S.C. urea	-	4.8d	5.0de	5.7de
Nov 19	1	Milorganite	-	5.0d	4.7df	4.7f
Nov 19	1	IBDU-coarse	-	4.8d	4.8df	4.7f
Nov 19	0	--	3	4.8d	4.7df	4.3f
-----	0	Check	-	4.7d	4.5ef	4.5f

^x - means in columns followed by the same letter are not significantly different from each other at the 5% level using the Duncan's Multiple Range Test.