

NITROGEN FERTILITY PROGRAM FOR
PENNCROSS CREEPING BENTGRASS GREENS

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The ongoing study evaluating carriers, rates, and timing of nitrogen on penncross creeping bentgrass has produced mixed results this season (Table 12). Color response to spring nitrogen applications was very poor. The response, regardless of the carrier (Table 13), was very non-uniform and produced a "blotchy" appearance. The treatments receiving a late-fall application of nitrogen displayed a uniform color response throughout the spring.

EFFECT OF PHOSPHORUS FERTILIZATION
ON PENNCROSS CREEPING BENTGRASS

Two studies were initiated on Penncross creeping bentgrass to evaluate the effect of phosphorus when applied to a phosphorus deficient soil. Identical studies, outlined in Table 14, were established on a Purr-Wick (dune sand) green and a sand-peat mix green.

These studies were initiated following soil tests which revealed a serious lack of potassium, magnesium and phosphorus in both soils. While tests for potassium and magnesium showed a deficiency in these soils there was no apparent response after application of these nutrients in a trial study. Applications of phosphorus gave the only response on these two soils.

This study will be continued to evaluate the long term effects of varying rates of phosphorus on soils with low CEC's and initially low test levels of phosphorus.

Table 12. Effect of nitrogen carriers on quality of a Penncross creeping bentgrass green at the Hancock Turfgrass Center.

Treatment		Turfgrass Quality Rating (9 = best)				
No.	Carrier	Dec. 15	Apr. 18	May 24	June 26	Aug. 1
1	IBDU	6.9 ad	4.9 fg	5.0 ce	4.1 j	5.4 af
2	S.C. urea	7.1 ac	4.9 fg	4.5 df	5.4 gh	5.9 af
3	P.B. + urea	7.4 ac	5.3 ef	5.6 bd	3.4 k	6.5 ae
4	P.B. + urea	4.9 ce	6.9 bc	5.1 ce	5.5 g	4.0 ef
5	Urea	8.3 a	6.8 bc	5.5 bd	4.4 ij	6.5 ae
6	Check	4.5 de	3.3 h	2.3 h	2.4 l	3.5 f
7	Urea	5.8 ae	5.4 ef	3.6 fg	4.1 j	4.4 df
8	Urea	6.2 ae	6.1 ce	6.4 b	7.5 cd	5.6 af
9	Urea	7.6 ab	8.7 a	8.9 a	8.8 a	7.9 a
10	IBDU	4.3 e	4.2 gh	4.5 df	7.1 de	6.4 ae
11	S.C. urea	6.1 ae	4.8 fg	4.0 eg	7.0 e	5.9 af
12	P.B. + urea	7.5 ac	6.4 ce	5.5 bd	7.5 cd	6.9 ad
13	Urea	5.9 ae	6.3 ce	6.1 bc	5.9 f	5.3 bf
14	Am. Nit.	8.3 a	7.3 b	5.8 bc	6.0 f	6.9 ad
15	Am. Nit.	5.3 be	5.8 df	5.4 bd	8.0 b	6.4 ae
16	Milorg.	4.9 ce	5.4 ef	5.6 bd	5.0 hi	4.6 cf
17	Milorg.	6.1 ae	5.2 ef	3.0 gh	7.0 e	7.1 ac
18	Oxamide	5.9 ae	3.4 h	3.5 fg	4.3 ij	4.6 cf
19	Oxamide	5.0 ce	3.4 h	3.0 gh	4.6 ij	5.2 bf

Table 13. Treatments applied in Penncross bentgrass nitrogen carrier fertility study at the Hancock Turfgrass Research Center. Treatments initiated in 1982. Plot size is 6 feet by 6 feet. Three replications.

Treatment		Month of application, pounds N per 1000 sq ft						
No.	N carrier	Nov	Apr	May	June	July	Aug	Sept
1	IBDU (coarse)	1.0	---	---	0.5	0.5	0.5	1.0
2	Sulfur coated urea	1.0	---	---	0.5	0.5	0.5	1.0
3	Powder blue + urea	0.5	---	---	0.25	0.25	0.25	0.5
4	Powder blue + urea	0.5	---	---	0.25	0.25	0.25	0.5
		---	---	0.5	0.75	---	---	1.0
		---	---	0.5	0.5	---	---	1.0
5	Urea	1.0	---	---	0.5	0.5	0.5	1.0
6	Check	---	---	---	---	---	---	---
7	Urea	---	1.0	---	---	---	---	1.0
8	Urea	---	1.0	1.0	1.0	---	---	1.0
9	Urea	---	2.0	2.0	2.0	---	---	2.0
10	IBDU (coarse)	---	1.0	1.0	1.0	---	---	1.0
11	Sulfur coated urea	---	1.0	1.0	1.0	---	---	1.0
12	Powder blue + urea	---	0.5	0.5	0.75	---	---	1.0
		---	0.5	0.5	0.5	---	---	1.0
13	Urea	---	1.0	1.0	---	---	1.0	1.0
14	Ammonium nitrate	1.0	---	---	0.5	0.5	0.5	1.0
15	Ammonium nitrate	---	1.0	1.0	1.0	---	---	1.0
16	Milorganite	1.0	---	---	0.5	0.5	0.5	1.0
17	Milorganite	---	1.0	1.0	1.0	---	---	1.0
18	Oxamide	1.0	---	---	0.5	0.5	0.5	1.0
19	Oxamide	---	1.0	1.0	1.0	---	---	1.0

Table 14. Phosphorus response treatments*

TRMT	#P ₂ O ₅ /M/yr	Applications	#K ₂ O/M/YR
1	0	0	3.0
2	2	Spring/Fall	3.0
3	1	Spring	3.0
4	4	Spring/Fall	3.0

*Study established 6/19/83.