

TURFGRASS SOIL MANAGEMENT RESEARCH REPORT - 1990

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NITROGEN CARRIER EVALUATIONS

Several nitrogen carriers were evaluated for responses at the Hancock Turfgrass Research Center in 1990. The grass was a blend of improved Kentucky bluegrasses. Plot size was 4 feet by 12 feet. Each treatment was replicated 3 times. Carriers evaluated are listed in Table 1. Nitroform is ureaformaldehyde. Nutralene contains methylene ureas from Nor-Am. The Sierra fertilizers are plastic coated materials from the Sierra Co. The 46-0-0 is urea while the other Anderson's fertilizers, including Rejuvenate are based on natural organic sources. Ringer's fertilizer is also based on natural organic sources from the Ringer Co. Sustane is a poultry manure based product from the Sustane Corp. N-Sure is a liquid product containing triazones and urea from the Arcadian Corp. Nitro-26 is a liquid fertilizer containing various methylene ureas from Growth Products. Clipping weights were collected on three dates from an area 22 inches wide by 10 feet, 2 inches long on each plot. Clippings were dried and weighed. Nitrogen carriers were applied at 1 pound nitrogen per 1000 sq. ft. on July 9 and August 20. Turf quality ratings were taken on dates shown in Table 1.

Eight days after application (July 17) most carriers gave significant improvement in turf quality ratings compared to the untreated check. Some of the natural organics and ureaformaldehyde gave slower responses as would be expected short term. One month after application (Aug 6) most carriers responded well except for ureaformaldehyde and Sustane. Four days after the second application (Aug 24) all carriers ranked better than the check. One month after the second application (Sept 21) only Anderson's 10-2-6 and N-Sure did not outrank the check. Two months after the second application in late October, most products still had better ratings than the check. By mid-November, many carriers still had very good ratings.

Clipping weight data are given in Table 2. Urea gave the highest clipping weights on the dates evaluated. The rapid availability of the nitrogen in urea would be expected to give the highest growth responses. Such rapid growth is not considered good from a physiological perspective, however.

Table 1 Kentucky Bluegrass Fertility Study 1990
 Hancock Turfgrass Research Center
 Quality Ratings 9=Excellent, 1=Poor
 1 pound N/M Applied July 9 and August 20, 1990

Treatments	Rating Dates, 1990					
	7/17	8/6	8/24	9/21	10/29	11/16
Nitroform	6.3 bc	6.7 de	7.0 cd	6.8ab	7.2ab	7.0 bcd
Nutralene	7.0abc	7.0 cd	7.3 bcd	7.0ab	7.5a	7.2abc
Sierra 34-0-7	6.8abc	7.7abc	7.3 bcd	7.2ab	7.7a	8.0a
Sierra 25-0-0	7.0abc	7.3 bcd	7.8ab	7.3a	7.7a	8.0a
Anderson 46-0-0	7.7a	7.5abc	8.0a	7.3a	7.8a	8.0a
Anderson 10-2-6	7.7a	7.7abc	7.5abc	6.5 bc	7.2ab	6.8 bcd
Anderson 5-3-3	7.7a	8.2a	8.0a	7.0ab	7.7a	7.7ab
Rejuvenate 9-3-6	7.3ab	7.7abc	7.7ab	6.8ab	7.3ab	7.0 bcd
Ringer 10-2-6	6.3 bc	7.2 cd	7.0 cd	7.0ab	7.2ab	7.2abc
Sustane 5-2-4	6.3 bc	6.7 de	6.8 d	6.7ab	6.5 bc	6.3 cd
N-Sure	7.0abc	7.3 bcd	7.0 cd	6.5 bc	7.0abc	6.8 bcd
Nitro 26	7.7a	8.0ab	7.3 bcd	6.7ab	7.2ab	7.3ab
Check	6.0 c	6.0 e	6.0 e	6.0 c	6.2 c	6.2 d

* - Means followed by the same letter are not significantly different at the 5% level using Duncans Multiple Range Test.

Table 2 Kentucky Bluegrass Fertility Study			
Values expressed as grams per square meter			
1 pound of N/M applied on July 9 and August 20, 1990			
Treatment	7/18/90	8/6/90	8/31/90
Nitroform	0.8 f	23.87ab	5.0 bc
Nutralene	1.0 f	28.36ab	7.3 bc
Sierra 34-0-7	1.2 def	30.65ab	6.6 bc
Sierra 25-0-0	2.0 bcdef	31.94ab	7.8 b
Anderson 46-0-0	4.8a	38.74a	11.7a
Anderson 10-2-6	3.0 b	36.09a	5.2 bc
Anderson 5-3-3	2.5 bcde	35.70a	8.4ab
Rejuvenate 9-3-6	2.7 bc	36.36a	7.4 bc
Ringer 10-2-6	1.4 cdef	37.79a	8.3ab
Sustane 5-2-4	1.4 cdef	25.76ab	5.0 bc
N-Sure	2.5 bcde	29.51ab	5.6 bc
Nitro 26	2.6 bcd	30.98ab	7.6 b
Check	1.1 ef	19.22 b	3.5 c

* - Means followed by the same letter are not significantly different at the 5% level using Duncans Multiple Range Test.