Nitrogen Source Trial – Precision Lab, Inc 2004

D.D. Minner and F. Valverde

Objective
To compare the benefit of a slow release form of nitrogen fertilizer to a relatively fast source such as urea in a USGA type green.

Methods
This study was conducted at the Horticulture Research Farm in Ames Iowa on a sand/peat USGA putting green. Nitrogen sources of urea, Nature's Time, and Nature Safe were applied monthly from May through Aug to the creeping bentgrass (*Agrostis stolonifera* L.) putting green (Table 1). Grass was mowed every other day at 3.9mm and watered as needed to prevent wilting. The experimental design was a randomized complete block with 3 treatments and 4 replications. Individual plots were 5ft by 5ft.

Table 1. Fertilizer rate and application time

	May 21	June 25	July 23	August 20
Nature's Time 7-2-5	1 lbs N/M	0.25 lbs N/M	0.25 lbs N/M	0.25 lbs N/M
Nature Safe 8-3-5	1 lbs N/M	0.25 lbs N/M	0.25 lbs N/M	0.25 lbs N/M
Urea Control	1 lbs N/M	0.25 lbs N/M	0.25 lbs N/M	0.25 lbs N/M

Visual ratings of turf color (scale 1-10; 6 least acceptable green) were recorded every 2 weeks. Clipping weight was collected 2 weeks after fertilizer application. Clippings were collected from a 4ft by 4ft square inside each treatment plot.

Results and Discussion

Statistically analyzed data appears in table 2. Turf color differences were observed on 4 of the 7 sampling dates from May through August. On three of the four sampling dates when turf color differences occurred there was no difference between Nature's Time and Nature Safe (Table 2). Urea produced a darker green color than Nature's Time and Nature Safe on all four of the sampling dates when differences occurred. The growth rate measured as clipping yield for Nature's Time and Nature Safe was similar to urea even though urea had a darker green color. The turf color and growth response of Nature's Time and Nature Safe are very similar with no discernable differences noted in this study.

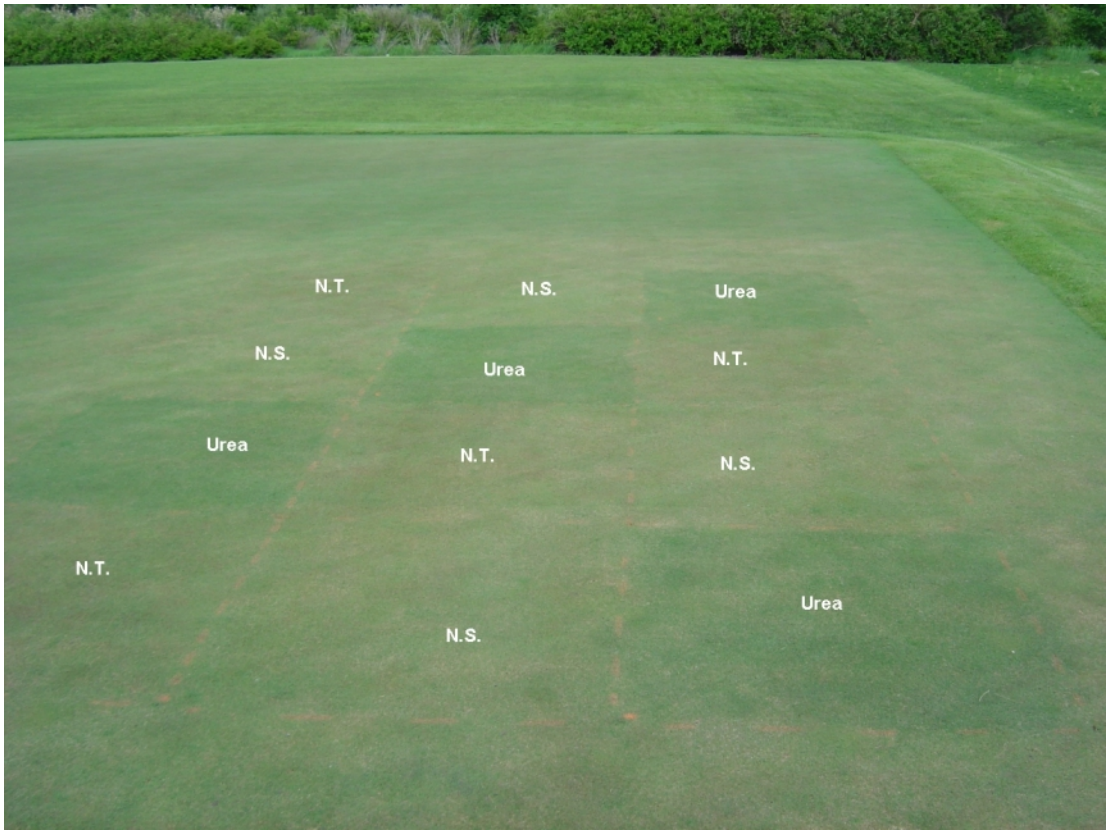
Table 2. Turf color and dry weight clipping yields during the summer of 2004 for nitrogen treatment.

	Color			
Color ratings observed	**Urea**	**N.Time**	**N. Safe**	**LSD $_{0.05}$**
11-Jun	8.50	7.25	7.50	**0.29**
25-Jun	8.38	8.00	8.00	**0.25**
9-Jul	8.50	8.50	8.50	**NS**
23-Jul	8.00	8.00	8.00	**NS**
6-Aug	9.00	8.00	8.38	**0.25**
20-Aug	8.63	8.13	8.13	**0.50**
7-Sep	8.75	8.63	8.50	**NS**

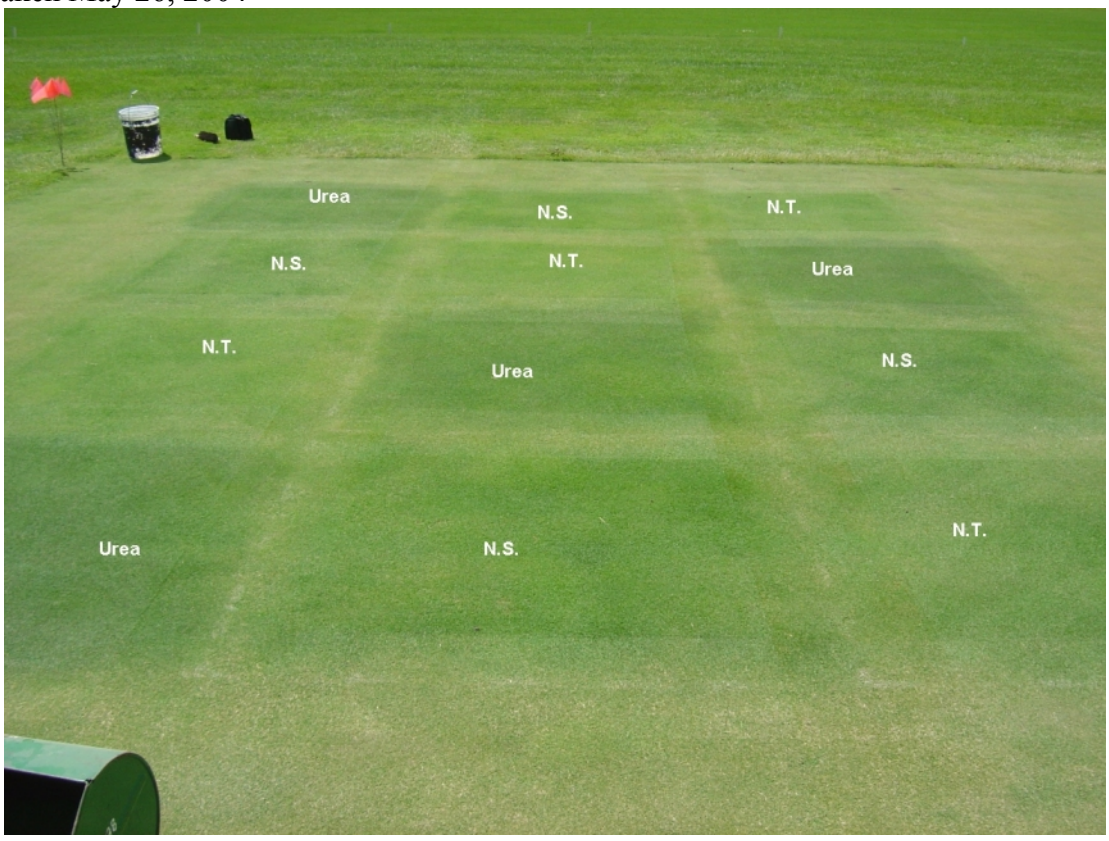
Dry weight (grams) in 16 ft^2

Clippings collected on:	**Urea**	**N.Time**	**N. Safe**	**LSD 0.05**
11-Jun	22.95	18.14	22.28	**NS**
9-Jul	21.59	21.00	20.54	**NS**
6-Aug	18.63	15.12	16.33	**NS**
7-Sep	26.42	29.00	24.53	**NS**

Slow release forms of fertilizer do not usually produce a very drastic visual difference, as was observed on this trial. However, it is a recommended source due to the low risk of damaging plant tissue and low N leaching rates when there is excess of rain or irrigation. When a fast recovery is necessary, fast release forms are preferred; however, special care has to be given to slow down N lost by water movement. If there is limited water movement and relatively good fertilization, differences between slow or fast release forms of N are not expected.



Picture taken May 26, 2004



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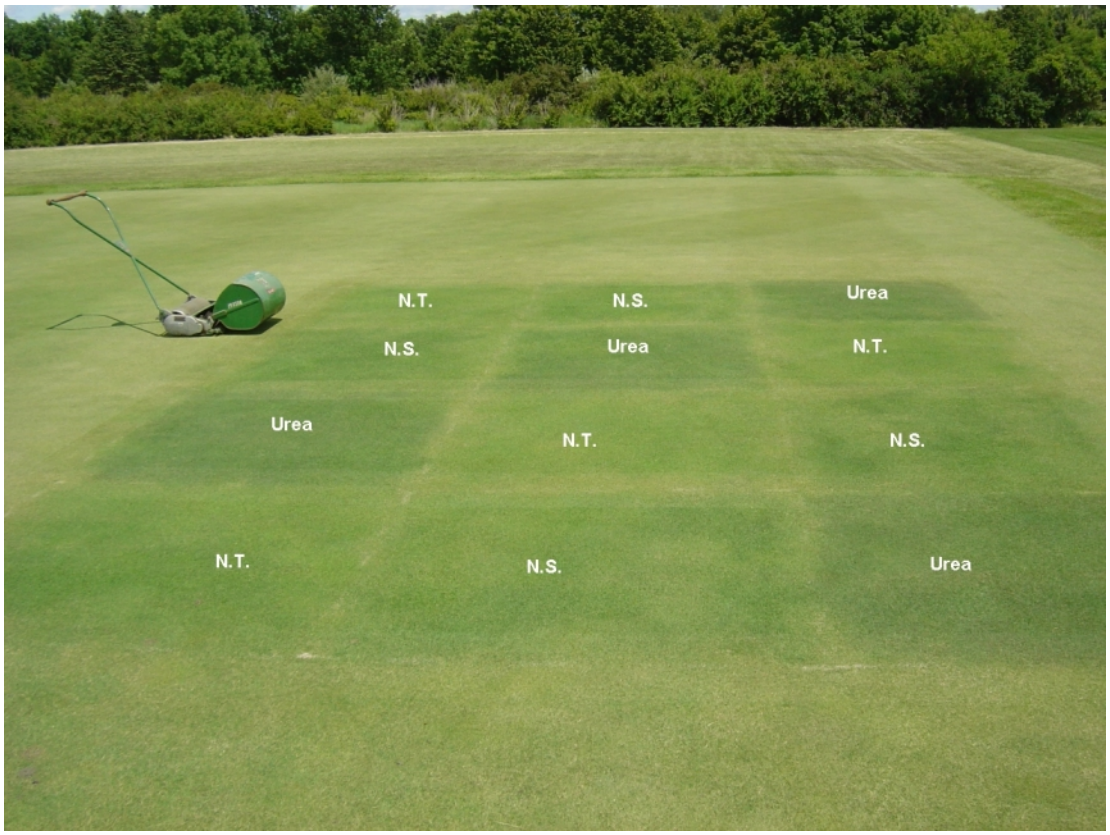

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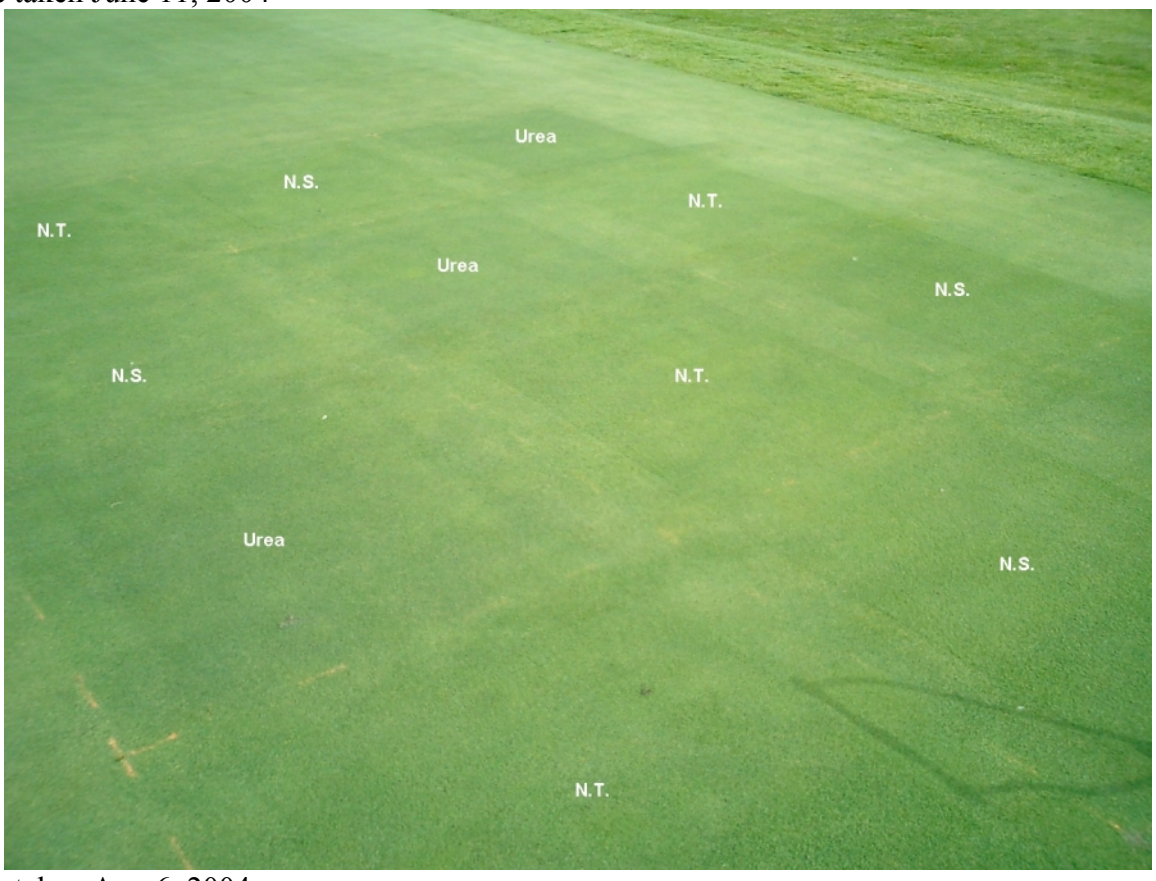
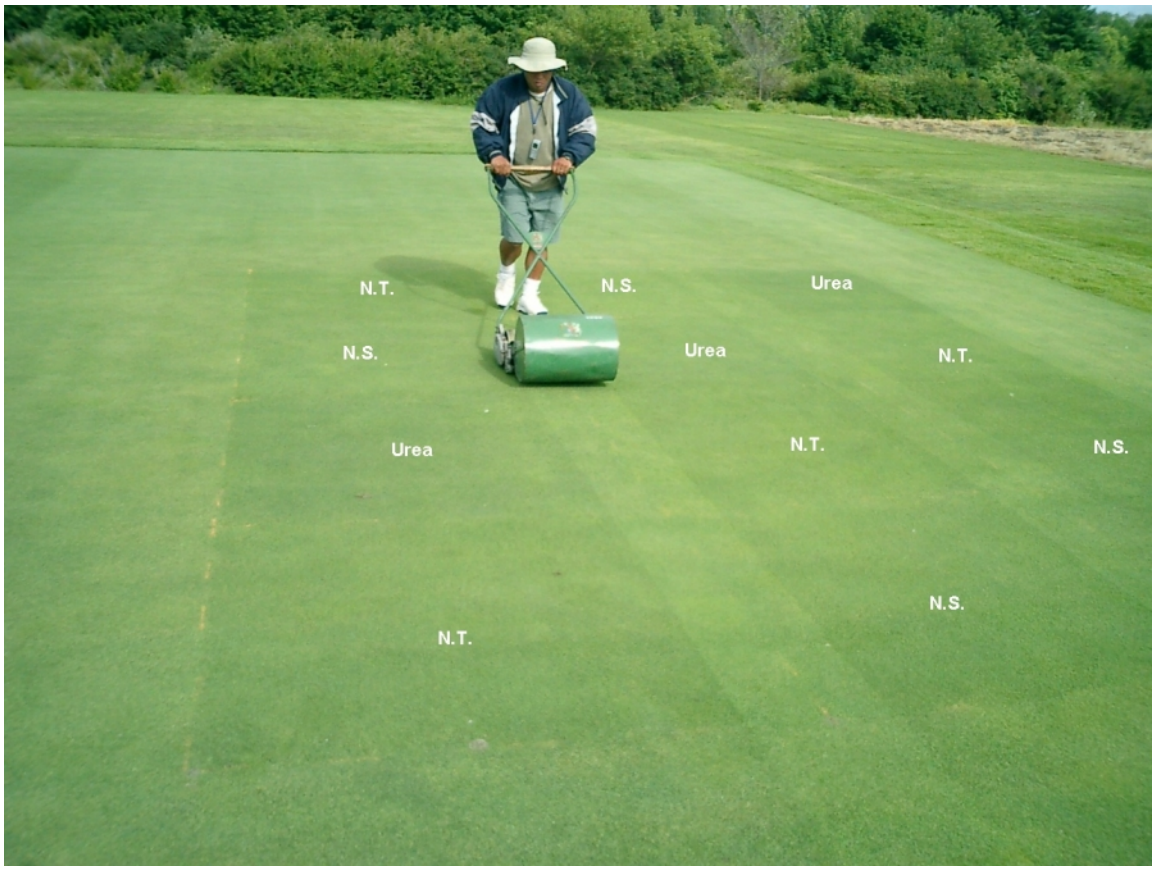


Picture taken Aug 6, 2004



Picture taken Aug 6, 2004

Picture taken September 7, 2004

Picture taken September 7, 2004