

TURF RESPONSES TO NITROGEN FERTILIZERS AND IRON

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Producing a good quality turf results from proper decision making on several management variables of which fertilization is one. Considering the interaction of aesthetics, stress tolerance, functionality, and economics of turf maintenance, selection of an appropriate fertilizer is a very important decision. One should know the expected responses to a given fertilizer, both short-term and long-term, as well as the water solubility, cost per unit of N, foliar burn potential, ease of application, and acidifying potential.

This study was initiated with the intent of providing short term comparisons among several commonly available nitrogen sources as well as some which are being tested experimentally. The carriers outlined in Table 1 were applied on August 18 to Bristol Kentucky bluegrass at the rate of 1.25 pounds N per 1000 square feet. Liquid formulations were sprayed on with 4 gallons water per 1000 square feet; dry materials were weighed and applied by hand. All plots were then irrigated for 20 minutes. One treatment included urea plus iron (ferrous sulfate applied at 2 ounces per 1000 square feet). The iron was applied after irrigation.

As would be expected the soluble nitrogen sources and foliar iron treatments gave a quicker response than the slower release materials. The Strengthen and Restore product also gave a very quick response as was observed in a similar study last year. Duration of the response to foliar applied iron is short-term when active growth is taking place and can be masked by high N application on Kentucky bluegrass in most cases. Iron can be used effectively to enhance color when lower N rates are used. Responses are evaluated by visual turfgrass quality ratings based on color, density and vigor. Statistical significance is determined using Duncan's new multiple range test.

Two of the materials in this study, Lawn Keeper and Lawn Restore, are being tested in greater detail for their effects on nitrogen responses and thatch control. In studies to date, Lawn Keeper gives a slightly faster response than Lawn Restore based on quality ratings, clipping yields and chlorophyll content in the clippings. Both of these products are considered slow release N sources. Effects on thatch degradation and microbial populations will be evaluated as well.

Table 1. Nitrogen carrier study on 'Bristol' Kentucky bluegrass.
 Nitrogen applied at 1.25 pounds per 1000 square feet on August 18.
 Three replications.

Formulation	Replication		
	<u>1</u>	<u>2</u>	<u>3</u>
Urea	C7	E11	C15
Ammonium Nitrate	B8	B10	C13
Lawn Resore (Ringer)	A5	A13	D15
Lawn Keeper (Ringer)	D8	E9	B14
Fish (Toots)	E7	D11	A15
Super 26 (CP Chem)	E8	A10	E13
Green Magic (Agrochem)	A7	B13	D13
Strengthen/Restore (Agchem)	A9	B12	D16
S. Coated Urea (CIL)	B6	C11	C16
IBDU (Estech)	C8	E12	D14
Oxamide (Estech)	C6	D10	E15
Milorganite	D9	C10	A14
Fluf (Cleary)	D7	A12	E16
18-5-9 (Lebanon)	B7	B11	C14
Powder Blue (BFC Chem)	A6	C12	E14
Urea + Iron Sulfate	A8	D12	B16
41-0-0 (Scotts)	C9	A11	B15
Check	B9	E10	A16