



Comparison of Some Nitrogen Carriers

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Nitrogen fertilizers promote turfgrass growth, color and quality. Growing concern over the adverse effects of N on ground-water quality, turf stress and disease susceptibility, require continuing improvement in N management practices. In response to this concern, many new slow release N carriers have become available with more in the evaluation phase. Some of these slow release N products have a sulfur or a polymer coating on the urea pellet that controls N release. Others are made from natural waste products such as sewage sludge or poultry manure.

The objective of this study is to compare several nitrogen carriers for both short and long term N availability as reflected by the turf color, quality ratings and clipping weights.

This study involves the evaluation of several nitrogen carriers on plots seeded to tall fescue. The carriers, some of which are not commercially available include: Scott's polymer coated urea; Anderson's sulfur coated urea; Herbruck's poultry manure based carriers; Nutralene, from the Nor-Am Co.; Two experimental fertilizers and Once (a polymer coated fertilizer) from the Grace Sierra Co.; An experimental coated urea from United Horticultural Supplies, (UHS); Terrene, an organic sludge-based material; Milorganite from the Milwaukee Sewage Commission; Ringers from Ringer Corp.; and Sustane, a poultry based product from the Sustane Corp. The urea and the Grace products are not slow release fertilizers. The urea treatment was used as a standard against which other products were compared.

The annual N fertilizer rate on the tall fescue is 4.5 lb per 1000 sq. ft. split over three equal applications during the growing season. The plot size is 4 by 12 feet with 4 replications on a loam soil with supplemental irrigation. The mowing height is 2.5 inches. A similar study was conducted in 1992 on tall fescue (4 lb. N per 1000 sq. ft.) and annual bluegrass maintained at fairway height (3 lb. N per 1000 sq. ft.). The clippings were removed.

In general, the sulfur coated materials were some what more effective in providing gradual release of N to turfgrass than the natural products in the 1992 study, but differences in response among treatments were not significantly different. Turfgrass quality and clipping weight appeared to be effected by weather, height of cut, species and uniformity of N application. The poorer than usual performance of the natural products may have been due to the cool and wet weather conditions of the 1992 growing season.

This information can help: 1) turf managers with planning their fertility management strategies for slow release nitrogen carriers; and 2) fertilizer companies to improve the quality of their products.