

Corn Gluten Meal Study on Three Turfgrass Populations

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Introduction: Over the last decade, corn gluten meal (CGM) has surfaced as an organic weed control product with potential for being a fertilizer as well. The purpose of this study is to evaluate the effectiveness of CGM as a fertilizer along with any impact on weed suppression or control. Duration of the study is to be seven years. The University of Minnesota's UMORE Park located in Rosemount is the site for this research project.

Turf populations: 3 turf areas of approximately 2200 square feet each were established during the fall of 2001 with treatment applications and research data collection initiated in spring of 2002. The three areas consisted of three different turfgrass mixtures or blends such that CGM could be evaluated for its effects on each. The first area consisted of a mixture of 25% Kentucky bluegrass, 25% fine leaved fescue, 25% perennial ryegrass and 25%

annual ryegrass. The second area consisted of 100% Park Kentucky bluegrass. The third area was a blend of 100% fine fescues.

Corn Gluten Meal applications: The treatments being evaluated in this study for fertilizer effects along with any weed suppression are listed below. The rate used, (20# per 1000 ft²), is consistent with that of commercially available CGM products. This rate applies 2# of N per 1000 ft² per application as the product is considered to be 10% N.

Treatment Descriptions

- + CGM applied once in early to mid May at 20# per 1000 ft²
- + CGM applied twice, once in early to mid-May and again 5 to 6 weeks later; both at 20# of product per 1000 ft²
- + CGM applied once in early to mid-May and early in August; both applications were at 20# of product per 1000 ft².

(Note this is the standard labeled timing for this product.)

+ CGM applied once in early to mid-May, once in early August and once in late October; all application rates were 20# of product per 1000 ft².

+ CGM applied once in late October at 20# of product per 1000 ft².

+ Control; no fertilizer applied at any time. **Mowing Treatments**

Each treatment is further subdivided into two different mowing heights to compare differences in CGM performance at a low and high mowing height. The lower height used is 1.5 inches and the higher height of cut is 3 inches. Mowing is done on an as needed basis removing no more than about 1/3 of the grass plant height at any one mowing.

Data Collection: Data collection began in the spring of 2002. Information

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Corn Gluten—

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gathered included ratings for color and overall stand density. Percent weed invasion was added in 2003. Plots are rated about every 4 to 6 weeks during the growing season.

Some preliminary observations: Following are some preliminary observations of the plots to date:

+ Little to no annual grassy weed invasion in any of the plots;

+ Broadleaf control (esp. dandelion) is rather poor in mixture and KB; doesn't seem to vary by treatment; some white clover invasion;

+ Little to no dandelions in FF; FF weed free

+ Reaches peak green-up about 2 to 4 weeks following application;

+ Sustained dark green color for 6 - 8 weeks following applications;

+ As amount of CGM applied during the year increased, so did the consistency of color retention and density, and

+ Spring green-up characteristics are good to excellent from late season (late October) applications.

Data collection will be continuing on a monthly basis in 2004 and beyond. It will be interesting and informative to observe what if any of the current trends change over the next few years.

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