

Vigoro Kentucky Bluegrass Fertilizer Study - 1996

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The purpose of this study was to screen two fertilizer products from Vigoro for longevity and safety on Kentucky bluegrass. The study was conducted at the Iowa State University Horticulture Research Station north of Ames, Iowa. The experimental area was 'Park' Kentucky bluegrass that was not fertilized this spring. The soil in this plot was a Nicollet (fine-loamy, mixed, mesic Aquic Hapludoll) with 3.5% organic matter, a pH of 7.3, 6 ppm P, and 85 ppm K.

The experiment was designed as a randomized complete block with three replications. Individual plots were 5 x 5 ft with 3 ft barrier strips between replications. There were four fertilizer treatments plus an untreated control. ParEx (24-4-12) and Experimental (21-4-12) were applied at 0.5 and 1.0 lb N/1000 ft² in single applications (Table 1). In addition, ParEx and Experimental were applied at 2.0 lb N/1000 ft² to nonreplicated 5 x 5 ft plots to evaluate the potential for fertilizer burn.

Applications were made June 13, 1996 using plastic coated containers as 'shaker dispensers'. A pre-treatment survey of the plot confirmed that turf quality was uniform. Irrigation was used to 'water in' the materials.

Visual quality and fresh clipping weight data were taken weekly beginning June 19. Subsequent data were taken on June 19, June 24, July 2, July 12, July 23, July 30, August 8, August 15, and August 23. Visual quality data also were taken on these days for the two nonreplicated demonstration plots. In some cases, slow turf growth and weather conditions necessitated changes in the collection dates. Turf quality was assessed with visual ratings using a 9 to 1 scale: 9 = best quality, 6 = lowest acceptable quality, and 1 = poorest quality (Table 1). Clipping weights were recorded in grams fresh weight and the mowing height for collecting clippings was 2 inches (Table 2). The nonreplicated plots were mowed at the same height but clippings were not collected. The plot was surveyed for phytotoxicity throughout the duration.

Data were analyzed using the Statistical Analysis System (SAS) version 6.09 and the Analysis of Variance (ANOVA) procedure. Means comparisons were made using Fisher's Least Significant Difference test (LSD). The quality data from the nonreplicated demonstration plots were not included in the analyses.

Among the replicated plots, there were significant quality differences on June 19 and August 8. The higher rates of ParEx and Experimental produced the best quality when compared with the other treatments and untreated controls. Turf quality was consistently better for the bluegrass treated with ParEx and Experimental at 2.0 lb N/1000 ft² than for the other treated and untreated turf. By August 23, the fertilizer effects were gone and turf quality was uniform among all treated and untreated turf (Table 1).

No phytotoxicity was detected on the fertilized plots throughout the duration of the test. The nonreplicated, demonstration plots treated at 2 lb N/1000 ft² also were monitored and there were no burn symptoms on these plots.

Clipping weights were significantly higher for all treated bluegrass when compared with the untreated controls on July 2, July 12, and July 23. Bluegrass receiving the higher rates of the fertilizers had significantly more clippings than the untreated controls on June 25, July 2, July 12, July 23, and August 15 (Table 2).