

# **The Effect of Tupersan on Four Creeping Bentgrass Cultivars Maintained at Fairway Height**

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Tupersan 50WP was evaluated for phytotoxicity on creeping bentgrass maintained at fairway height. This study was conducted at the Iowa State University Horticulture Research Station north of Ames, Iowa. The soil in this area up was a Nicollet (fine-loamy, mixed, mesic Aquic Hapludoll) with a pH of 7.25, 5 lb/acre P, and 60 lb/acre K.

Four experimental plots were set up, one in each of four creeping bentgrass cultivars (Penncross, Penneagle, SR-1019, and Dominant) mowed at 0.5 in. Each experiment was arranged in a randomized complete block design. Individual plots were 5 x 5 ft with three replications. There were three treatments including an untreated control. Tupersan 50WP was applied at 24 lb product/A and in double applications at 24 lb product/A per application to simulate overlap (Table 1). The assignment of treatments to plots was randomized. Tupersan was applied using a carbon dioxide backpack sprayer equipped with #8006 nozzles and a spray pressure of 30 psi. The plots were irrigated with 0.5 - 1.0 inch of water immediately after application. Supplemental irrigation was used to maintain the bentgrass in good growing condition.

The initial treatments were made May 29, 1996. The plots were checked for turf quality and phytotoxicity periodically beginning June 3. Subsequent data were taken June 10, June 26, July 3, July 18, August 8, August 29, September 5, and September 11. Visual quality was assessed using a 9 to 1 scale: 9 = best quality, 6 = lowest acceptable quality, and 1 = poorest quality (Table 1).

Data were analyzed with the Statistical Analysis System (SAS) version 6.09 and the Analysis of Variance (ANOVA) procedure. Means were compared with Fisher's Least Significant Difference (LSD) test.

May 30, the plots treated with Tupersan still retained a slight whitish color from the material. This color was still visible on June 3 but by June 10 was no longer evident. At no time during the study were there any signs of phytotoxicity on any of the treated plots (Table 1).

**Table 1.** Visual quality<sup>1</sup> of fairway height creeping bentgrass in the 1996 Bentgrass Phytotoxicity Study.

Material	Rate (lbs product/A <sup>2</sup> )	June 3	June 10	June 26	July 3	July 18	Aug 8	Sept 5	Sept 11	Mean quality
<u>SR-1019</u>										
1. Untreated control	NA	7	7	8	8	9	9	8	8	8
2. Tupersan 50WP	24	7	7	8	8	9	9	8	8	8
3. Tupersan 50WP	48 <sup>1</sup>	7	7	8	8	9	9	8	8	8
LSD <sub>0.05</sub>		NS	NS	NS	NS	NS	NS	NS	NS	NS
<u>Dominant</u>										
1. Untreated control	NA	7	7	8	8	9	9	8	8	8
2. Tupersan 50WP	24	7	7	8	8	9	9	8	8	8
3. Tupersan 50WP	48 <sup>1</sup>	7	7	8	8	9	9	8	8	8
LSD <sub>0.05</sub>		NS	NS	NS	NS	NS	NS	NS	NS	NS
<u>Penncross</u>										
1. Untreated control	NA	7	7	8	8	9	9	8	8	8
2. Tupersan 50WP	24	7	7	8	8	9	9	8	8	8
3. Tupersan 50WP	48 <sup>1</sup>	7	7	8	8	9	9	8	8	8
LSD <sub>0.05</sub>		NS	NS	NS	NS	NS	NS	NS	NS	NS
<u>Penneagle</u>										
1. Untreated control	NA	7	7	8	8	9	9	8	8	8
2. Tupersan 50WP	24	7	7	8	8	9	9	8	8	8
3. Tupersan 50WP	48 <sup>1</sup>	7	7	8	8	9	9	8	8	8
LSD <sub>0.05</sub>		NS	NS	NS	NS	NS	NS	NS	NS	NS

<sup>1</sup> Visual quality was assessed using a 9 to 1 scale: 9 = best quality, 6 = lowest acceptable quality, and 1 = poorest quality.

<sup>2</sup> Twice the Tupersan and water were applied to plots receiving treatment 3.

NS = means are not significantly different at the 0.05 level.