

Project: Comparison of safened and unsafened formulations of Revolver on kikuyugrass fairways

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Experimental design and application: The trial was conducted at La Jolla Country Club (Bruce Duenow, superintendent) on a kikuyugrass fairway with turf mowed at approximately 3/8". Plots measured 5 feet by 10 feet and treatments were replicated three times, in a randomized design. Plots 2 and 5 were subdivided on 8/21 to allow for evaluation of 1 vs. 2 applications of the test products.

Treatments were applied on August 14 and 21, 2002. Applications were made with a CO₂ backpack sprayer equipped with 8004 VS flat fan nozzles and delivering 0.98 gallons of water per 1000 square feet, with 30 psi at the boom. Calibration of each nozzle was confirmed prior to application to be within 5% of the desired nozzle flow rate. Boom height was 17 inches

above the ground. The spray swath was 5 feet. Speed was 3 mph. Spray bottles were agitated by shaking 20 times prior to charging with compressed CO₂. Spray lines were purged with CO₂ and then water prior to changing treatments.

Evaluations: Turf quality was measured pre-treatment, as well as 7, 21 and 28 days post-treatment. Ratings were made using a chlorophyll meter (Spectrum Technology; Field Scout CM1000) that measures ambient and reflected 700 nm and 840 nm light to calculate a relative chlorophyll index.

Data analysis: Data was subjected to analysis of variance, and treatment means were separated using Fisher's LSD, where P<0.05.

Chlorophyll meter readings (X = 5) taken with the Spectrum Field Scout. Turf of acceptable quality correlates with readings greater than 300 and are roughly equivalent to a visual rating of 6, when a 0 – 9 scale is used (0 = worst possible turf; 9 = best possible turf). Treatment means were separated using analysis of variance (Fisher's LSD, p<0.05).

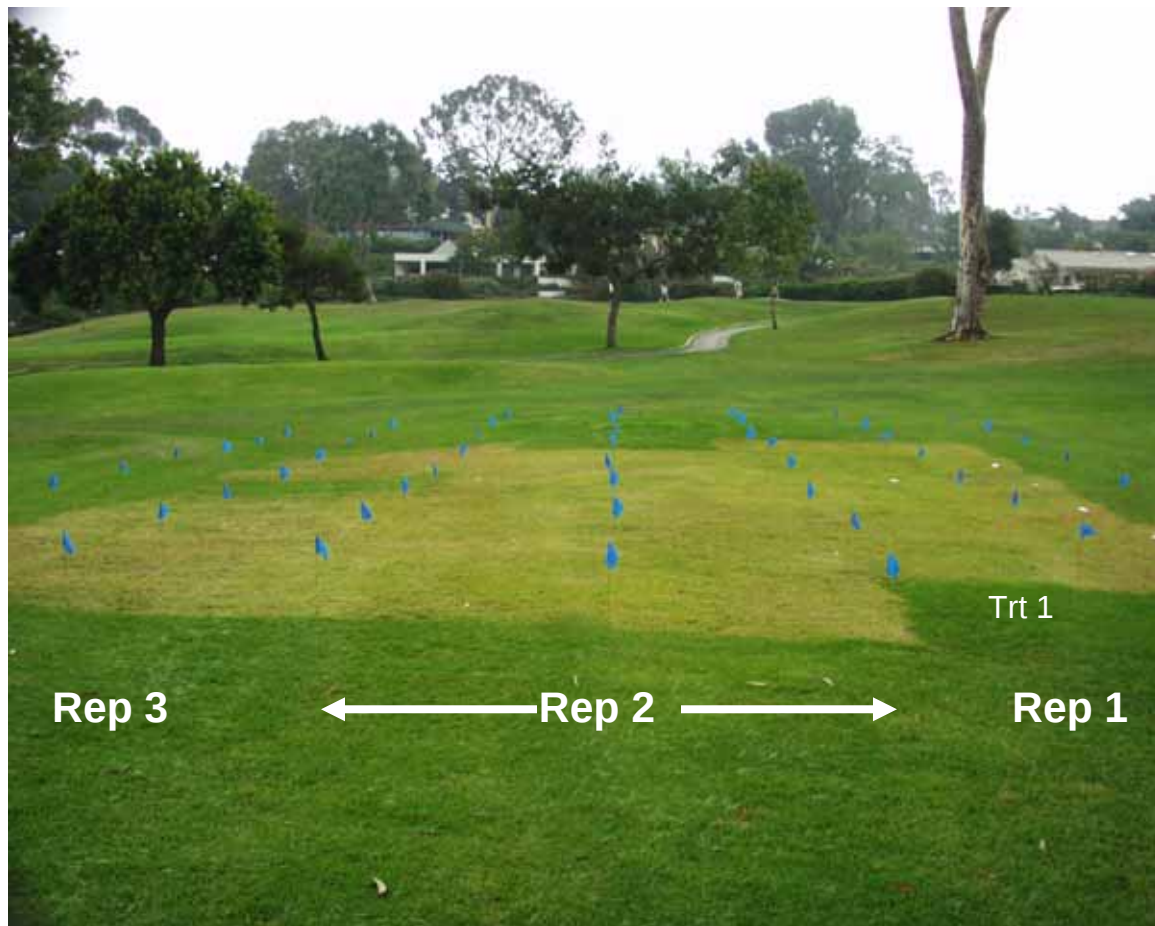
Trt	Formulation	Rate/1000 sq ft	Dates of applic.	14-Aug	21-Aug	5-Sep	12-Sep
1	Untreated			423 a	340 a	370 a	392 a
2	AE F13060 01 1KO5 A8	0.4 oz	8/14, 21	399 a	236 b	131 b	126 d
3	1KO5 A8	0.6 oz	8/14	368 a	240 b	144 b	154 cd
4	1KO5 A8	1.2 oz	8/14	399 a	244 b	146 b	144 cd
5	AE F13060 01 1KO2A1	0.4 oz	8/14, 21	384 a	260 b	146 b	133 cd
6	1KO2A1	0.6 oz	8/14	404 a	248 b	147 b	167 bcd
7	1KO2A1	1.2 oz	8/14	379 a	236 b	145 b	141 cd
8	1KO5 A8	0.4 oz	8/14	400 a	232 b	160 b	212 b
9	1KO2A1	0.4 oz	8/14	384 a	234 b	168 b	180 bc

Key trends:

- All treatments caused significant phytotoxicity to kikuyugrass, with damage progressively worsening over a three week period (8/14 – 9/5/02). By 4 weeks after treatment, the decline in turf quality had leveled off, and in some cases (treatments 8 and 9, single applications of the lowest rates tested) some recovery was observed.
- On 8/21 and 9/5 (1 and 3 weeks after the first treatment), the only differences observed were between the non-treated check and the treated plots. There were no significant differences among the Revolver treatments, however.
- On 9/12 (4 WAT), some differences among treatments began to emerge (P<0.5), including:

- A single application of either the A8 or A1 formulation resulted in less phytotoxicity than two applications of these formulations, when applied at the 0.4 oz/1000 sq ft rate. This effect seems to be primarily due to more rapid recovery of the kikuyugrass in the plots treated with a single application of material.
- A single application of the A8 formulation showed significantly less phytotoxicity at the 0.4 oz/1000 rate than either the 0.6 or 1.2 rates. However, there was no significant difference between the 0.6 and 1.2 oz rates.
- There were no significant differences among the three rates tested for the A2 formulation – 0.4, 0.6 or 1.2 oz/1000 sq ft.
- There was a slight trend indicating that the A1 formulation may be more toxic than the A8 formulation. However, this was not statistically significant at the 0.05 level.

Photograph from 9/5/02 (3 WAT):



Plot Plan: La Jolla Country Club

		9				8
4	7	5	6	1	3	2
9			8			
5	3	6	2	4	7	1
	8			9		
1	2	3	4	5	6	7