

Stop #8b: Evaluation of Plant Growth Regulators on Kikuyugrass Turf

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Objective:

These studies were conducted to quantify effects of Legacy (flurprimidol + trinexapac-ethyl), Primo Maxx (trinexapac-ethyl), Anuew (prohexadione calcium) and Trimmit (paclobutrazol) on growth regulation, injury and visual turfgrass quality of kikuyugrass maintained as a golf course fairway.

Materials and methods:

The study was conducted on mature 'Whittet' kikuyugrass (*Pennisetum clandestinum*) turf on a Hanford fine sandy loam and mowed at 0.450 inches three times/wk. Turf receives 2 lbs N/M/yr and verticutting during the summer. The study was setup as a randomized complete block, with 4 replications on 4'x10' plots. Treatments were applied with a CO₂-powered backpack sprayer with TeeJet 8003VS nozzles (9-inch spacing; 2 gal/M) on June 26 (initial treatment), July 17 (3 WAIT), August 7 (6 WAIT) and August 28 (9 WAIT). Plots were evaluated for turf quality and injury 5 days and 3, 6 and 9 weeks after initial treatment.

Results:

On 2 July 2015 Legacy (30 oz/A) and Primo Maxx treatments resulted in improvements of turfgrass quality in comparison to control, while Anuew (8 oz/A), Anuew (16 oz/A) and Trimmit (24 oz/A) resulted in the lowest ratings. On 16 July 2015 highest rating were obtained with the Primo Maxx treatment. Legacy (20 oz/A), Anuew (8 oz/A) and Trimmit (16 oz/A) resulted in lowest ratings. On 6 August 2015 Trimmit (24 oz/A) treatment resulted in a lower rating in comparison to the control. Similar results were observed on 27 August 2015.

On 2 July 2015 there were no significant differences in turfgrass injury among treatments. On 16 July 2015 Primo Maxx treatment resulted in lowest turfgrass injury, while Anuew (16 oz/A) and both Trimmit treatments resulted in highest injury. Also on 6 August 2015 Primo Maxx resulted in lowest injury, as well as Legacy (30 oz/A) and both Anuew treatments. Trimmit (24 oz/A) resulted in highest injury. On 27 August 2015 Anuew (8 oz/A) and Anuew (16 oz/A), Legacy (20 oz/A) and Primo Maxx treatments resulted in lowest injury, which is comparative to untreated control. Trimmit (24 oz/A) treatment resulted in highest injury.

Treatment list:

No.	Treatment	Company	Rate (oz/A)	Frequency (wks)
1	Untreated Control	-	-	-
2	Legacy (20 oz/A)	SePRO	20	3
3	Legacy (30 oz/A)	SePRO	30	3
4	Primo Maxx	Syngenta	13	3
5	Anuew (8 oz/A)	Nufarm	8	3
6	Anuew (16 oz/A)	Nufarm	16	3
7	Trimmit (16 oz/A)	Syngenta	16	3
8	Trimmit (24 oz/A)	Syngenta	24	3

Plot plan:

Kikuyugrass PGR Study (16L)
North

101	102	103	104	105	106	107	108
Trt 1	Trt 6	Trt 3	Trt 7	Trt 4	Trt 8	Trt 2	Trt 5

201	202	203	204	205	206	207	208
Trt 2	Trt 4	Trt 5	Trt 1	Trt 7	Trt 3	Trt 6	Trt 8

301	302	303	304	305	306	307	308
Trt 7	Trt 5	Trt 1	Trt 8	Trt 6	Trt 4	Trt 2	Trt 3

401	402	403	404	405	406	407	408
Trt 2	Trt 6	Trt 4	Trt 5	Trt 1	Trt 8	Trt 3	Trt 7

Tables: Effects of PGRs on kikuyugrass quality and injury.

No.	Treatment	Turfgrass Quality (0-9)			
		7/02/2015	7/16/2015	8/6/2015	8/27/2015
1	Untreated Control	3.25 b	4.00 ab	4.25 ab	4.00 ab
2	Legacy (20 oz/A)	3.50 ab	3.50 b	4.00 ab	4.00 ab
3	Legacy (30 oz/A)	4.50 a	4.25 ab	4.00 ab	3.5 abc
4	Primo Maxx	4.50 a	4.75 a	4.75 a	4.25 ab
5	Anuew (8 oz/A)	3.25 b	3.50 b	4.25 ab	4.75 a
6	Anuew (16 oz/A)	3.00 b	3.75 ab	4.00 ab	4.00 ab
7	Trimmit (16 oz/A)	3.50 ab	3.50 b	3.75 ab	3.25 bc
8	Trimmit (24 oz/A)	3.25 b	3.75 ab	3.00 b	2.5 c

No.	Treatment	Turfgrass Injury (%)			
		7/02/2015	7/16/2015	8/6/2015	8/27/2015
1	Untreated Control	40 a	44 ab	21 bc	26 bcd
2	Legacy (20 oz/A)	45 a	48 ab	33 ab	19 d
3	Legacy (30 oz/A)	40 a	43 ab	31 abc	36 abc
4	Primo Maxx	41 a	36 b	15 c	21 cd
5	Anuew (8 oz/A)	54 a	51 ab	21 abc	16 d
6	Anuew (16 oz/A)	45 a	53 a	25 bc	23 bcd
7	Trimmit (16 oz/A)	55 a	53 a	33 ab	36 ab
8	Trimmit (24 oz/A)	53 a	54 a	41 a	49 a