

## **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 CO<sub>2</sub>-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
<b>Trt 1</b>	<b>Trt 6</b>	<b>Trt 3</b>	<b>Trt 7</b>	<b>Trt 4</b>	<b>Trt 8</b>	<b>Trt 2</b>	<b>Trt 5</b>

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

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

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

**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>b</b>	4.00 <b>ab</b>	4.25 <b>ab</b>	4.00 <b>ab</b>
2	Legacy (20 oz/A)	3.50 <b>ab</b>	3.50 <b>b</b>	4.00 <b>ab</b>	4.00 <b>ab</b>
3	Legacy (30 oz/A)	4.50 <b>a</b>	4.25 <b>ab</b>	4.00 <b>ab</b>	3.5 <b>abc</b>
4	Primo Maxx	4.50 <b>a</b>	4.75 <b>a</b>	4.75 <b>a</b>	4.25 <b>ab</b>
5	Anuew (8 oz/A)	3.25 <b>b</b>	3.50 <b>b</b>	4.25 <b>ab</b>	4.75 <b>a</b>
6	Anuew (16 oz/A)	3.00 <b>b</b>	3.75 <b>ab</b>	4.00 <b>ab</b>	4.00 <b>ab</b>
7	Trimmit (16 oz/A)	3.50 <b>ab</b>	3.50 <b>b</b>	3.75 <b>ab</b>	3.25 <b>bc</b>
8	Trimmit (24 oz/A)	3.25 <b>b</b>	3.75 <b>ab</b>	3.00 <b>b</b>	2.5 <b>c</b>

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