



## **Reduced-Toxicity Weed Management Product Efficacy**

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### **OBJECTIVE**

To determine the efficacy of various reduced-toxicity herbicides for the control of various broadleaf weeds in lawn-height turfgrass.

### **MATERIALS AND METHODS**

The study was conducted at the O.J. Noer Turfgrass Research and Education Facility in Madison, WI on lawn-height Kentucky bluegrass/perennial ryegrass mixture with heavy weed infestations. The 2016 trial (Table 1) was initiated in fall 2015 and was repeated for a second year this past spring. The 2017 trial (Table 2) was initiated in fall 2016 and added one new treatment into the treatment list. The individual plots measured 3 ft X 10 ft and were arranged in a randomized complete block design with four replications. Individual treatments were applied at a nozzle pressure of 40 p.s.i using a CO<sub>2</sub> pressurized boom sprayer equipped with XR Teejet AI8004 VS nozzles. All treatments were agitated by hand and applied in the equivalent of 1.5 gallons of water per 1000 ft<sup>2</sup>, except for Adios herbicide, which was applied in 4.5 gallons of water per 1000 ft<sup>2</sup> per the label recommendations. One herbicide application was initiated on 10/21/2016, while the rest were initiated in the spring of 2017 on various dates with various reapplications according to label directions. Weed counts were conducted 3 times in spring/summer of 2017. Results were subjected to an analysis of variance and means were separated using Fisher's LSD ( $P = 0.05$ ). Results are displayed in Tables 1 and 2.

### **RESULTS AND DISCUSSION**

The 2016 trial that was continued from the previous year had initial differences in weed percentages in each plot most likely due to the different effectiveness of each of the herbicides from the previous year. On the last rating date only treatments 6, 7, 8, and 9 significantly lowered the percent of weeds in each plot compared to the nontreated controls.

The 2017 trial that was just initiated last fall did not have any significant differences in percent weeds in each plot. On the last rating date all treatments significantly reduced weed percentages when compared to the nontreated controls. Treatments 7, 8, 9, and 10 performed the best of all the treatments.

**Table 1. Mean percent weeds per treatment at the OJ Noer Turfgrass Research and Education Facility in Madison, WI in 2017. Study was initiated in fall 2015.**

Treatment	Rate	Application Date	Percent Weed Cover <sup>a</sup>		
			May 26	Jun 23	Jul 13
1 Non-treated control			57.64a	72.91a	87.50a
2 Fiesta	25.2 fl oz/1000 ft <sup>2</sup>	5/23, 6/19	31.25ab	22.91b	57.63ab
3 Tenacity Spreader Sticker	5 fl oz/A 3 pts/100 gal	5/23, 6/8	49.30a	27.08b	59.02ab
4 Quicksilver	2 fl oz/A	5/23, 6/8	57.64a	56.25a	75.69a
5 Adios	192 fl oz/1000 ft <sup>2</sup>	5/23	49.305a	54.17a	75.00a
6 Defendor-Spring Spreader Sticker	4 fl oz/A 3 pts/100 gal	4/7, 5/23	5.56b	13.89b	25.00cd
7 Defendor-Fall Spreader Sticker	4 fl oz/A 3 pts/100 gal	10/21	15.278b	20.14b	36.11bc
8 Turflon Ester Ultra	0.5 qts/A	5/23, 6/19	55.56a	31.24b	50.83cd
9 Trimec 1000	1.5 fl oz/1000 ft <sup>2</sup>	5/23, 6/19	31.94ab	4.86b	0.695d

<sup>a</sup>Weeds were visually assessed using a 36-point grid and tallying weeds at each point per plot. Means in each column followed by the same letter do not significantly differ (P=.05, Fisher LSD).

**Table 2. Mean percent weeds per treatment at the OJ Noer Turfgrass Research and Education Facility in Madison, WI in 2017. Study was initiated in fall 2016.**

Treatment	Rate	Application Date	Percent Weed Cover <sup>a</sup>		
			May 26	Jun 23	Jul 13
1 Non-treated control			31.94a	59.72a	89.58a
2 Fiesta	25.2 fl oz/1000 ft <sup>2</sup>	5/23, 6/19	37.50a	45.14ab	49.99b
3 Tenacity Spreader Sticker	5 fl oz/A 3 pts/100 gal	5/23, 6/8	24.30a	25.69bcd	50.69b
4 Quicksilver	2 fl oz/A	5/23, 6/8	28.47a	30.55bc	47.91b
5 Adios	192 fl oz/1000 ft <sup>2</sup>	5/23	37.50a	45.83ab	62.49b
6 Defendor-Spring Spreader Sticker	4 fl oz/A 3 pts/100 gal	4/7, 5/23	45.83a	14.58cd	39.58b
7 Defendor-Fall Spreader Sticker	4 fl oz/A 3 pts/100 gal	10/21	48.61a	27.08bcd	34.02bc
8 Turflon Ester Ultra	0.5 qts/A	5/23, 6/19	18.00a	33.33bc	12.50cd
9 Trimec 1000	1.5 fl oz/1000 ft <sup>2</sup>	5/23, 6/19	39.58a	4.16d	0.00d
10 Civitas WEEDfree	4 gal/A	5/23, 6/19	45.14a	13.89cd	11.80cd

<sup>a</sup>Weeds were visually assessed using a 36-point grid and tallying weeds at each point per plot. Means in each column followed by the same letter do not significantly differ (P=.05, Fisher LSD).