

Stop #6: Kurapia Groundcover Tolerance to Homeowner Accessible Herbicides

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Objectives:

Kurapia tolerance to various herbicides has been tested by UCR and the University of Arizona Cooperative Extension. In general, the best and safest weed control in this groundcover is accomplished using preemergence herbicides, specifically metolachlor (e.g., Pennant Magnum), prodiamine (e.g., Barricade), pronamide (e.g., Kerb). This study focused on evaluating products and active ingredients that are accessible to homeowners.

Materials and Methods:

Nine different herbicides were tested on mature Kurapia established in 2015. Soil was a Hanford fine sandy loam. Treatment list is presented in Table 1. Herbicides were applied using a CO₂-powered backpack sprayer with TeeJet 8002VS nozzles calibrated to deliver 1 gal/1000 ft². Herbicides were mixed at the 1/2x rate and sprayed 1, 2 (x rate), or 3 (1.5x rate) times representing 3 separate treatments. In the case of Sedge Killer and Sedgehammer+, which are pre-mixtures, treatments were sprayed 1 (x rate), 2 (2x rate), or 3 (3x rate) times. Experimental design was a randomized block with 3 replications. Plot size was 4 ft x 6 ft with 4-ft alleys. Plots were evaluated for flowering (%), green cover (%) and injury (%). Ratings were made at 0, 4, 6, and 8 days after treatment (DAT) before publication of this report.

Results:

Herbicide used was statistically significant in case of all measured traits whereas number of passes over plots was not. Gradual changes of evaluated parameters were observed over time. Almost all of herbicides except for Grass Getter and Fusilade II caused loss of flowers compared to control within 4 DAT. Two of the herbicides lead to browning and loss in green color of plants (Nutsedge Killer and Roundup for Lawns). Both WeedBGone herbicides (Weed Killer and Crabgrass Control) caused yellowing of the plants. Among sedge herbicides only Sedgehammer+ and Monument caused complete loss of flowers with no other effects within 8 DAT. Results are presented in Table 2.

Preliminary results suggest that products containing sulfentrazone are too injurious to Kurapia and thus are not recommended. For grass control, products containing fluazifop or sethoxydim are very safe on Kurapia. For sedge control, it is too early to tell which is safest among Sedgehammer, Certainty, and Monument. An earlier study conducted on newly established Kurapia at UCR found that Sedgehammer was more injurious than

Certainty; however, researchers at the University of Arizona found that both Sedgehammer and Certainty were safe on Kurapia that was likely more established compared to our earlier trial.

Table 1. List of treatments applied in the Kurapia herbicide tolerance study. Riverside, CA. 2017.

Treatment number	Herbicide	Active ingredient(s)	Rate
1	Control	-	-
2			0.5 x
3	Roundup for Lawns	MCPA + Quinclorac + Dicamba + Sulfentrazone	x = 6.4 oz/M
4			1.5 x
5			0.5 x
6	WeedBGone Weed Killer	Dicamba + 2,4-D + Mecoprop-p	x = 4 oz/M
7			1.5 x
8	WeedBGone Crabgrass	Quinclorac + Dicamba + 2,4-D	0.5 x
9	Control		x = 6.4 oz/M
10			1.5 x
11			x = Premix
12	Nutsedge Killer	Sulfentrazone	2 x
13			3 x
14			x = 0.5 oz/M
15	Sedgehammer+	Halosulfuron-methyl	2 x
16			3 x
17	Certainty		0.5 x
18	+	Sulfosulfuron	x = 0.75 oz/A
19	NIS 0.25% v/v		1.5 x
20	Monument		0.5 x
21	+	Trifloxysulfuron sodium	x = 10 g/A
22	NIS 0.25% v/v		1.5 x
23	Grass Getter		0.5 x
24	+	Sethoxydim	x = 0.6 oz/M
25	MSO 0.25% v/v		1.5 x
26	Fusilade II		0.5 x
27	+	Fluazifop-P-butyl	x = 24 oz/A
28	NIS 0.25% v/v		1.5 x

NIS – Non-ionic surfactant; MSO – Methylated seed oil

Table 2. Effects of herbicides on flowering, green cover, and injury of Kurapia plants. Riverside, CA. 2017.

Herbicide	Rate	Flowering %			Green cover %			Visual injury %											
		0 DAT	4 DAT	8 DAT	0 DAT	4 DAT	8 DAT	0 DAT	4 DAT	8 DAT									
Control	0	93	ab	95	a	97	a	97	a	98	a	100	a	0	a	0	a	0	a
Roundup for Lawns	0.5x	65		0		0		98		77		80		0		2	3	14	
	1x	70	ab	0	c	0	c	98	a	72	b	63	b	2	a	2	8	21	cd
	1.5x	56		0		0		100		42		35		0		6	2	48	
WeedBGone Weed Killer	0.5x	90		0		0		100		98		100		1		2		8	
	1x	85	a	0	c	0	c	100	a	98	a	80	a	0	a	7	ab	20	bc
	1.5x	88		0		0		100		100		82		0		1	0	26	
WeedBGone Crabgrass Control	0.5x	67		0		0		98		100		92		0		3		13	
	1x	77	a	0	c	0	c	98	a	100	a	93	a	0	a	0	ab	10	ab
	1.5x	100		0		0		100		99		100		0		1		6	
Nutsedge Killer	1x	65		2		0		95		25		17		0		6	8	74	
	2x	70	ab	1	c	0	c	100	a	4	c	5	c	0	a	6	4	94	e
	3x	78		0		0		100		8		3		0		9	2	94	
Sedgehammer +	1x	70		41		0		95		96		100		0		2		1	
	2x	67	ab	16	c	0	c	99	a	100	a	100	a	1	a	0	a	0	a
	3x	60		7		0		98		97		96		0		0		0	
Certainty	0.5x	53		19		13		100		100		98		0		0		0	
	1x	88	a	53	bc	4	c	98	a	97	a	98	a	0	a	0	a	0	a
	1.5x	88		40		2		100		98		99		0		2		0	
Monument	0.5x	87		28		0		100		100		100		0		0		0	
	1x	62	ab	19	c	0	c	100	a	100	a	100	a	0	a	0	a	1	a
	1.5x	63		7		0		100		97		100		0		0		1	
Grass Getter	0.5x	68		58		87		98		100		100		0		0		0	
	1x	72	a	77	ab	98	a	98	a	98	a	100	a	0	a	0	a	0	a
	1.5x	95		97		98		100		100		100		0		0		0	
Fusilade II	0.5x	53		60		72		100		100		100		0		0		0	
	1x	90	ab	88	ab	99	a	100	a	100	a	100	a	0	a	0	a	0	a
	1.5x	67		66		72		100		98		97		0		2		1	

Means followed by the same letter for a trait (e.g., flowering %) are not significantly different (P=0.05).