

Title: Herbicides for Weed Control in Dahlia

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Dahlia tubers were received from Cook Lane Dahlias and were transplanted into freshly-cultivated field at WSU Mount Vernon NWREC June 3, 2012. Herbicides were broadcast-applied preemergence to weed and dahlia foliage June 3. Percent weed control was estimated July 15, after which all plots were weeded by hand. Opened flowers and unopened buds were counted and stem height was measured August 25, and tubers were dug, split, and counted November 10. The trial was a randomized complete block with three replicates. The cultivars ‘Audrey Grace’ and ‘Parkland Rave’ were transplanted into all plots in all replicates; the cultivars ‘Javier G’, ‘Tahoma Eli’, ‘JO’, ‘Summit Globe’, ‘Obsidian’, and ‘Lynet’ were planted into treatments as tuber numbers allowed. Because these six cultivars were only included in a single replicate, however, no statistics could be performed and data are presented only for comparative purposes.

Weed control in mid-July was over 90% with Karmex and Pendulum Aquacap and over 75% for Tenacity, Chateau, and EPTC (Table 1). No dahlia injury ratings for ‘Audrey Grace’ and ‘Parkland Rave’ differed significantly by herbicide treatment, indicating that these cultivars were tolerant to all herbicides applied at these rates. There was, however, a trend toward potential injury from Pendulum Aquacap (dahlia height and tuber number) and Karmex (flower and bud number). There were no clear trends in herbicide affects on the other cultivars (Tables 2-5).

Based on these data, it appears that these herbicides warrant further testing for field production of dahlia. The cultivars will be tested a second season in 2012 to gain data for potential registration of these herbicides in dahlia.

Table 1. Weed control and dahlia² height, flower, and tuber production after treatment with various herbicides (2011).

Treatment	Rate	Weed control	Height	Flower number	Bud number	Tuber number
	product/a	%	cm	per plant	per plant	per plant
Eptam	6.8 pt	75 c	55	4.3	11.9	14.5
Treflan	2 pt	68 cd	54	2.0	7.2	12.2
Karmex	4 lb	90 ab	48	0.6	9.4	7.6
Devrinol	8 lb	52 e	62	4.0	14.4	10.6
Surflan	3 pt	58 de	54	2.6	9.4	8.8
Pendulum Aquacap	4.2 pt	98 a	36	2.0	9.0	5.6
Pennant Magnum	2 pt	63 cde	52	1.7	9.8	8.0
Tenacity	5 fl.oz	77 bc	50	2.5	8.8	9.8
Chateau	3 oz	77 bc	59	3.4	9.0	12.2
Non-treated	---	100 a	38	1.8	3.5	5.3

Means in the same column followed by the same letter, or not followed by a letter, are not significantly different (P < 0.05).

²Dahlia cultivars are ‘Audrey Grace’ and ‘Parkland Rave’.

Table 2. Dahlia^z height after treatment with various herbicides (single replicate, 2011).

Treatment	Rate	'Javier G'	'Tahoma Eli'	'JO'	'Summit Globe'	'Obsidian'	'Lynet'
	product/a						
Eptam	6.8 pt	112	80	67		44	
Treflan	2 pt	96	76	59			
Karmex	4 lb	109	87	66	86	84	
Devrinol	8 lb	74	80	22	54	56	
Surflan	3 pt	111	101	24	81		93
Pendulum Aquacap	4.2 pt	100	87	13	60	88	
Pennant Magnum	2 pt	116	81	93		87	
Tenacity	5 fl.oz	39	75	51			
Chateau	3 oz	93	57	70			
Non-treated	---	84	68	83	64	13	

Table 3. Dahlia^z flower number after treatment with various herbicides (single replicate, 2011).

Treatment	Rate	'Javier G'	'Tahoma Eli'	'JO'	'Summit Globe'	'Obsidian'	'Lynet'
	product/a						
Eptam	6.8 pt	8	13	4		0	
Treflan	2 pt	3	9	4			
Karmex	4 lb	5	10	3	10	5	
Devrinol	8 lb	4	7	0	2	2	
Surflan	3 pt	8	12	0	6		3
Pendulum Aquacap	4.2 pt	5	11	0	2	6	
Pennant Magnum	2 pt	9	7	4		9	
Tenacity	5 fl.oz	0	3	4			
Chateau	3 oz	4	8	5			
Non-treated	---	3	10	4	5	0	

Table 4. Dahlia^z flowerbud number after treatment with various herbicides (single replicate, 2011).

Treatment	Rate	'Javier G'	'Tahoma Eli'	'JO'	'Summit Globe'	'Obsidian'	'Lynet'
	product/a						
Eptam	6.8 pt	41	22	10		6	
Treflan	2 pt	27	23	9			
Karmex	4 lb	42	35	12	20	15	
Devrinol	8 lb	13	16	0	3	4	
Surflan	3 pt	36	26	1	15		7
Pendulum Aquacap	4.2 pt	33	37	0	9	31	
Pennant Magnum	2 pt	45	19	18		17	
Tenacity	5 fl.oz	5	17	14			
Chateau	3 oz	26	15	21			
Non-treated	---	20	23	8	13	4	

Table 5. Dahlia^z tuber number after treatment with various herbicides (single replicate, 2011).

Treatment	Rate	'Javier G'	'Tahoma Eli'	'JO'	'Summit Globe'	'Obsidian'	'Lynet'
	product/a						
Eptam	6.8 pt	11	4	4		5	
Treflan	2 pt	10	7	12			
Karmex	4 lb	11	14	9	10	11	
Devrinol	8 lb	8	9	8	10	8	
Surflan	3 pt	13	7	9	5		24
Pendulum Aquacap	4.2 pt	13	9	0	6	9	
Pennant Magnum	2 pt	1	5	13		10	
Tenacity	5 fl.oz	5	8	9			
Chateau	3 oz	7	4	18			
Non-treated	---	8	5	2	5	8	