



## Herbicide Safety to Jackman Clematis (*Clematis x jackmanii*).

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**Nature of Work:** Determine the safety of preemergent herbicides to jackman clematis (*Clematis x jackmanii*).

Jackman clematis is notorious for its large and colorful flowers. Unfortunately, not much information is available on herbicide safety to clematis. The goal of the project is to determine what preemergent herbicides can be used over the top of containerized clematis.

**Material and Methods:** On July 27, 2003 at the Center for Applied Nursery Research, 72 three gallon pots of Jackman Clematis (*Clematis x jackmanii*) were assembled. Cultivars included: Ernest Markham, Henryi, H F Young, Nellie Moser, The President. Nellie Moser was included in all the treatments, but other cultivars were included randomly among treatments. Nine, one gallon pots of each species were placed in a 6 ft. x 6 ft. area. Herbicide treatments were then applied to the area. After the herbicide application, pots were carefully moved to an evaluation area and arranged in a randomized complete block (RCB) design. Each treatment contained 3 replications, and each replication contained 3 subsamples. At least one of those subsamples included *Clematis x jackmanii* 'Nellie Moser'. The process was continued for each herbicide treatment. Sprays were applied with a CO<sub>2</sub> backpack sprayer calibrated to deliver 20 gallons per acer (GPA). Watering occurred on an as needed basis, and this represented approximately ½ to 1 inch of water per day. The treatment list was as follows:

Treatment#	Treatment	Rate
1	Barricade 65 WG	1.5 (lb ai/A)
2	Dimension 1 SL	0.5 (lb ai/A)
3	Gallery 75 WP	1.0 (lb ai/A)
4	Pennant Magnum 7.62 SL	2.5 (lb ai/A)
5	Surflan 4 SL	4.0 (lb ai/A)
6	RegalKade 0.37 GR	406 (lb product/A)
7	Ronstar 2 GR	200 (lb product/A)
8	Check	

Injury ratings were taken at 4, 8, and 12 weeks after treatment (WAT). Plant injury was taken on a (0-100 scale) and numbers represented the following:

Value	Plant Symptoms
0	No visual injury present
10-30	Minimal injury to desirable plant. Less than 10% of the plant leaf service area showing chlorosis and necrosis.
40-70	More noticeable plant injury or stunting. Greater than 50% of the leaf area showing symptoms of chlorosis and/or necrosis.
80-90	Plants severally injured. Most of the leaves and leaf surface showing signs of chlorosis and necrosis.
100	Plant appears dead. No signs of regrowth.

**Results:** All treatments gave rise to visual injury symptoms at 4, 8, and 12 weeks after treatment (WAT), but no treatments were significantly different from the control. The treatments that caused the least injury (<10%) to the clematis during the duration of the study were Barricade, RegalKade, and Ronstar (Table 1).

**Significance to Industry:** This test showed that some commonly used preemergent herbicides can cause visual injury to clematis foliage. Certain injury symptoms are more acceptable than others, and care should be taken in selecting a preemergent herbicide for use in clematis.

**Table 1.** Injury to Jackman Clematis (*Clematis x jackmanii*) at 4, 8, and 12 WAT 2003.

Treatment #	Treatment	Rate	Clematis Injury Ratings (0-100)*		
			4 WAT	8 WAT	12 WAT
1	Barricade 65 WG	1.5 (lb ai/A)	6.7a	26.7a	0.0a
2	Dimension 1 SL	0.5 (lb ai/A)	30.0a	43.3a	0.0a
3	Gallery 75 WP	1.0 (lb ai/A)	46.7a	33.3a	0.0a
4	Pennant Magnum 7.62 SL	2.5 (lb ai/A)	16.7a	10.0a	0.0a
5	Surflan 4 SL	4.0 (lb ai/A)	23.3a	16.7a	0.0a
6	RegalKade 0.37 GR	406 (lb product/A)	6.7a	13.3a	0.0a
7	Ronstar 2 GR	200 (lb product/A)	0.0a	0.0a	0.0a
8	Check		0.0a	0.0a	0.0a
LSD			51.77	43.34	0.0

\*Means followed by same letter do not significantly differ (P=0.05, LSD)