Chlorsulfuron and triclopyr for control of perennial pepperweed.[1]

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A field study was conducted in San Diego, CA in 2005 with two objectives; to compare chlorsulfuron alone or chlorsulfuron plus triclopyr to see if triclopyr could substitute for one half of the chlorsulfuron, and to evaluate 6 different timing and growth stage combinations for control of established perennial pepperweed. The experiment utilized a randomized complete block design with four replications. Plot size was 5 by 10 feet. Herbicides were applied with a CO_2 backpack sprayer using 3 flat fan nozzles on a boom covering 5 feet. Perennial perpperweed growth stage, weather, and application parameters are shown in Table 1. All treatments included a non-ionic surfactant at 1% v/v. No untreated control plots were included, but there were buffer areas of untreated perennial pepperweed between replicate blocks. Weed control was visually evaluated on the June and August treatment dates, and the following spring on April 18, 2006. All treatments controlled 100% of the perennial pepperweed, so these data are not shown. Table 2 has the herbicide treatments and timings. Substituting triclopyr for one half of the chlorsulfuron did not decrease weed control. In like manner, application timing and two versus one treatment did not seem to change the degree of control.

Table 1. Perennial pepperweed experiment application and site parameters, San Diego, CA.

Application date	April 13, 2005	June 10, 2005	August 11, 2005
Perennial pepperweed growth stage	3 feet tall, no flowers, few tillers	3-4 feet tall, flowers	3-4 feet tall, flowers
Air temperature (F)	65	65	85
Wind (MPH)	0-2	0-2	0-2
Cloud cover (%)	100	100	0
Nozzle size	8002vs	8004vs	8004vs
Pressure (psi)	30	40	40
Spray volume (gpa)	29	44	53

Table 2. Herbicide treatments and timing for perennial pepperweed control, San Diego, CA. All treatments controlled 100% of the perennial pepperweed one year after treatment.

Treatment	Rate (lbai/A)	Application date and timing
Chlorsulfuron	0.094	April 13, 2005
Chlorsulfuron	0.094	April 13 & June 10, 2005
Chlorsulfuron	0.094	April 13 & August 11, 2005
Chlorsulfuron	0.094	June 10, 2005
Chlorsulfuron	0.094	June 10 & August 11, 2005
Chlorsulfuron	0.094	August 11, 2005
Chlorsulfuron plus triclopyr	0.047 + 1	April 13, 2005
Chlorsulfuron plus triclopyr	0.047 + 1	April 13 & June 10, 2005
Chlorsulfuron plus triclopyr	0.047 + 1	April 13 & August 11, 2005
Chlorsulfuron plus triclopyr	0.047 + 1	June 10, 2005

[1] Originally published as a Research Progress Report, Western Society of Weed Science, 2007. The information in this report is not intended as a guideline or recommendation for control of invasive plants with the herbicides or control practices discussed. Please follow all applicable laws and regulations before using herbicides for control of invasive plants; along with complying with practices that protect you, other people, other species, and the natural environment.

Chlorsulfuron plus triclopyr	0.047 + 1	June 10 & August 11, 2005
Chlorsulfuron plus triclopyr	0.047 + 1	August 11, 2005