Chlorsulfuron rate evaluation for onionweed control.[1]

Carl E. Bell[1], Jessica Vinge[2], Marcus Spiegelberg[2] , and Mark Girard[3].
([1]Cooperative Extension, University of California, San Diego, CA 92123; [2]Center for Natural Lands Management, San Diego, CA 92107; and [3]Habitat Restoration Sciences, Carlsbad, CA 92008).

A field study was conducted in San Diego, CA in 2006 to investigate chlorsulfuron rates for control of onionweed and non-target effects on native vegetation (Table). The experiment utilized a randomized complete block design with four replications. Plot size was 5 by 25 feet. Chlorsulfuron was applied on April 13, 2006 with a CO_2 backpack sprayer using 3 - 8002vs flat fan nozzles on a boom covering 5 feet at 40 psi for a spray volume of 59 gpa. Onionweed at time of application was variable, ranging from 10 to 50 leaves, 3 to 24 inches tall, with some flowers on older plants and some seed. A variety of native species were present in the treatment plots, these were treated along with the onionweed. Weather at time of application was 65 F, clear skies, and a 3-5 MPH wind. Plots were visually evaluated for onionweed control and injury to native plants on June 1 and June 27, 2006 (Table). Onionweed seed production relative to chlorsulfuron rate was estimated from 3 – 1 square foot random samples per plot of plants collected on June 27, 2006. Seed were combined by plot, cleaned and weighed (Table). Seed number was directly counted or by weighing 200 seed in a sample for an estimate of weight per seed times the total seed weight. There was a positive correlation between herbicide rate and onionweed control and the highest rate was required for acceptable control. All rates caused flowers to abort shortly after treatment and caused a similar decrease in seed production. Native vegetation populations were not consistent between plots, so many of the evaluations were not replicated and data are not shown. Damage to native vegetation was variable and most severe at the highest rate, with several herbaceous annuals killed and some herbaceous perennials injured. One shrub (buckwheat, *Eriogonum fasiculatum*) appears to be tolerant of the highest rate of chlorsulfuron.

Table. Chlorsulfuron treatments and visual evaluations for onionweed control, San Diego, CA.

Chlorsulfuron rate (lbai/A)	Percent weed control		Seed estimates	
	June 1, 2006	June 27, 2006	Seed weight (g/3 square feet/plot)	Seed number/ 3 square feet/plot
0	0	0	15.3	10453
0.024	42	65	2.4	1601
0.047	69	69	0.3	289
0.094	90	99	1.4	1151

[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.