FINDING EFFECTIVE HERBICIDE TREATMENTS FOR FENNEL (*FOENICULUM VULGARE*)

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Fennel is an introduced perennial wildland weed of low elevations throughout California and is particularly extensive on Marine Corps Base Camp Pendleton in San Diego County, the site for this study. Experimental objectives are to find effective rates of two herbicides: glyphosate and triclopyr, either singly or in combination, that also minimize damage to other plant species. In February of 2004 we treated small regrowing fennel plants, approximately 20-30 cm high that had been burned in the wildfires of October 2003. Seven treatments were applied as broadcast applications over the entire plot. In addition, each of the herbicides was applied as a spot spray to just the fennel to reduce effects on other plant species. We used a completely randomized design with four replications. Broadcast treatments were applied with a CO2 pressurized sprayer while spot spraying used a hand pumped backpack sprayer. Data collected included cover estimates for fennel and native purple needlegrass (*Nassella pulchra*), biomass estimates for fennel, and visual evaluations of weed control. All of the herbicides, except the broadcast applications of glyphosate, controlled fennel well when observed approximately 6 weeks after treatment. The broadcast applications also controlled other weeds present (annual grasses and filaree), the spot spray did not. None of the treatments effected purple needlegrass. All treatments except the low rate of glyphosate reduced fennel cover compared to the untreated control. All treatments reduced fennel biomass compared to the untreated control. Broadcast herbicide treatments that included triclopyr reduced fennel biomass better than the broadcast treatments of glyphosate.