

RESPONSE OF FRASER FIR AND PERSISTENT WEEDS TO PREEMERGENCE AND POSTEMERGENCE HERBICIDES. Robert J. Richardson, Bernard H. Zandstra, and Joeseeph G. Masabni, Research Associate, Professor, and Former Research Associate, Department of Horticulture, Michigan State University, East Lansing, MI 48824.

Field studies were conducted in 2001 and 2002 to evaluate Fraser fir and weed response to selected herbicides in two commercial Christmas tree plantations near Gobles and Hart, Michigan. Treatments in the fall 2001 studies included 2 lb ai/A simazine, 1 lb ai/A oxyfluorfen, 1 lb ai/A isoxaben, 1 lb ai/A azafenidin, 0.4 lb ai/A flumioxazin, 3 lb ai/A pendimethalin, 4 lb ai/A oryzalin, 0.2 lb ai/A halosulfuron, and 0.5 lb ai/A sulfentrazone. Spring 2002 studies included simazine, oxyfluorfen, isoxaben, flumioxazin, pendimethalin, 2 lb ai/A pronamide, and sulfentrazone. Midseason 2002 studies included 1 lb ai/A bentazon, 0.125 lb/A oxyfluorfen, 0.047 lb/A halosulfuron, 0.19 lb ai/A clopyralid, 0.12 and 0.25 lb/A flumioxazin, and 0.5 lb ai/A bromoxynil. In fall 2001 studies, field pansy was controlled greater than 79% at both locations by oxyfluorfen, azafenidin, flumioxazin, and sulfentrazone and common ragweed was controlled greater than 80% by isoxaben, azafenidin, and halosulfuron. At Hart, hoary alyssum was controlled at least 88% by isoxaben, azafenidin, flumioxazin, halosulfuron, and sulfentrazone; annual grasses were controlled greater than 80% by azafenidin, flumioxazin, pendimethalin, and oryzalin. Goosegrass was controlled 58% by azafenidin at Gobles while control with other herbicides did not exceed 20%. Horseweed control was generally good at Gobles, except with pendimethalin and oryzalin, which did not control the weed. In the spring 2002 studies, hoary alyssum was controlled 77 to 88% at the Hart location by simazine, isoxaben, and sulfentrazone, while common ragweed was controlled only by flumioxazin. Annual grasses were controlled at least 73% by all applications. Field pansy was only controlled by oxyfluorfen at both locations. At Gobles, horseweed was only controlled by sulfentrazone and no treatments controlled common ragweed greater than 70%. No significant Fraser fir injury was observed from any fall or spring treatments. In the midseason 2002 studies, hoary alyssum, common milkweed, and field pansy were not controlled greater than 70% by any treatment at Hart. White campion was controlled 80% by halosulfuron and common ragweed was controlled 80% or greater with halosulfuron, clopyralid, and bromoxynil. At Gobles, horseweed was controlled 97 to 100% with bentazon, halosulfuron, and bromoxynil. Fraser fir injury ranged 29 to 57% at both locations from bentazon, halosulfuron, flumioxazin, and bromoxynil.