

CHRISTMAS TREE AND WEED RESPONSE TO FLUMIOXAZIN. Robert J. Richardson*, Bernard H. Zandstra, and Jill O'Donnell, Michigan State Univ., East Lansing, MI 48824.

Flumioxazin is currently under development for use in Christmas tree plantations. Research studies were conducted in 2002 and 2003 to evaluate response of blue spruce and selected weeds to flumioxazin and herbicide mixtures with flumioxazin. In a program comparison study, flumioxazin (0.4 kg ai/ha) was applied alone and in mixture with pendimethalin (3.4 kg ai/ha) on November 12, 2002. Comparison treatments included simazine (2.2 kg ai/ha), isoxaben (1.2 kg ai/ha), oxyfluorfen (1.2 kg ai/ha), and sulfentrazone (0.6 kg ai/ha), each in mixture with 3.4 kg/ha pendimethalin, and a non-treated control. Blue spruce visible injury on June 11, 2003 was 5% with flumioxazin plus pendimethalin and 9% with sulfentrazone plus pendimethalin. Visible injury on August 28, 2003 was 6% with sulfentrazone plus pendimethalin, but injury was not present with other treatments. The predominant injury symptom was needle necrosis and new growth was not affected. Horseweed (*Conyza canadensis*) and dandelion (*Taraxacum officinale*) control on July 16, 2003 did not differ by treatment and averaged 87% and 72%, respectively. Virginia pepperweed (*Lepidium virginicum*) control was at least 80% with all treatments, except oxyfluorfen plus pendimethalin at 47%. Common catsear (*Hypochoeris radicata*) control was 73% with flumioxazin plus pendimethalin and 87% with simazine plus pendimethalin, but did not exceed 67% with other treatments. On August 28, 2003, horseweed control exceeding 78% with only flumioxazin, flumioxazin plus pendimethalin, and sulfentrazone plus pendimethalin. Annual grass control was greater than 80% with all treatments containing pendimethalin, but was 67% with flumioxazin alone. In a flumioxazin program study, flumioxazin was applied alone at 0.14, 0.28, and 0.4 kg/ha on May 6, 2003. Other treatments included flumioxazin at 0.28 kg/ha in mixtures with pendimethalin (3.4 kg/ha), s-metolachlor (1.3 kg ai/ha), simazine (1.68 kg/ha), and simazine plus pendimethalin, a comparison treatment of simazine plus oxyfluorfen (0.56 kg/ha) plus pendimethalin, and a non-treated control. Visible injury on June 11, 2003 was 12% with treatments containing flumioxazin plus pendimethalin. Injury was not observed with other treatments and visible injury was not present on August 28, 2003. Horseweed and dandelion control exceed 80% with all treatments on July 16, 2003. Control of false dandelion was greater than 70% with treatments containing flumioxazin plus simazine and with flumioxazin plus pendimethalin. Annual grass control on August 28, 2003 was at least 86% with treatments containing pendimethalin or s-metholachlor, but was 70% with 0.14 kg/ha flumioxazin and flumioxazin plus simazine.