

**TOLERANCE TO SELECTED HERBICIDES AND WEED CONTROL IN ORNAMENTALS.** Robert E. Uhlig\* and Bernard H. Zandstra, Graduate Research Assistant and Extension Professor, Department of Horticulture, Michigan State University, East Lansing, MI 48824.

Field studies were conducted at the Horticulture Research and Teaching Center located near East Lansing, Michigan in 2003 and 2004 to evaluate herbicide response and weed control in field grown Japanese barberry (*Berberis thunbergii*) var. 'Burgundy Carousel', redosier dogwood (*Cornus stolonifera*) var. 'Alleman's Compact', winged euonymus (*Euonymus alatus*) var. 'Chicago Fire', panicle hydrangea (*Hydrangea paniculata*) var. 'Kyushu', holly (*Ilex x meserveae*) var. 'Blue Prince', white spruce (*Picea glauca*) var. 'Dwarf Alberta', Japanese spirea (*Spiraea japonica*) var. 'Fire Light', preston lilac (*Syringa x prestoniae*) var. 'Donald Wyman', anlojap yew (*Taxus x media*) var. 'Browni', and white cedar (*Thuja occidentalis*) var. 'Holmstrup'. Terbacil (1.12 kg ai/ha), imazapic (0.07 kg ai/ha), imazaquin (0.42 kg ai/ha), halosulfuron (0.035 kg ai/ha), flumioxazin granular (0.28 kg ai/ha), isoxaben (1.12 kg ai/ha) plus trifluralin (0.84 kg ai/ha) were applied over the top of the plants on July 14, 2003. An untreated control was included as a check. Weed control and crop injury were evaluated at 2 and 6 weeks after treatments (WAT) on a scale of 1 to 10, meaning 1 = no weed control or no crop injury, and 10 = complete weed control or crop death. In November, plant height and width were measured. Plant size index was calculated according to the following formula: height + width/2. Experimental design for crop injury and size index was split block with the main plot and subplot being treatment and species, respectively. Experimental design for weed control was a randomized complete block. Crop injury, size index, and weed control data were analyzed using ANOVA and means were separated at  $P = 0.05$ .

Woody ornamentals holly, white spruce, anlojap yew, and white cedar were not injured by any of the treatments at 6 WAT, but terbacil caused the most injury on the remaining species evaluated at 2 and 6 WAT. Imazaquin, imazapic, and halosulfuron injured Japanese barberry, redosier dogwood, and panicle hydrangea, except halosulfuron which was safe to panicle hydrangea in both years. Flumioxazin and isoxaben plus trifluralin were the safest treatments. Plant size index did not differ among treatments except for redosier dogwood, in which imazaquin and imazapic treatments stunted plant growth compared to the control.

Terbacil, imazaquin, and flumioxazin provided excellent control in all weeds rated at 6 WAT. Imazaquin control of common lambsquarters was poor in 2003, but flumioxazin controlled common groundsel and common chickweed 7.8 and 6.3, respectively. Imazapic weed control was excellent in all weed species except for common lambsquarter and common groundsel. Halosulfuron did not provide consistent weed control. Isoxaben plus trifluralin was among the best treatments for control of redroot pigweed, common lambquarters, common chickweed, and curly dock in 2004.

A trade-off between weed control and crop injury was observed. However, flumioxazin and isoxaben plus trifluralin were the safest treatments on the ornamental species evaluated with relatively good weed control.