

GLADIOLUS AND WEED RESPONSE TO FLUMIOXAZIN AND OTHER HERBICIDES. Robert J. Richardson and Bernard H. Zandstra, Michigan State University, East Lansing, MI 48824.

Few herbicide options are available for broadleaf weed control in gladiolus production. Flumioxazin is currently in development for preemergence (PRE) use in this cropping system. Therefore, field studies were conducted in 2002 and 2003 near Bronson, MI, to evaluate flumioxazin for use in gladiolus. In the first study, flumioxazin was compared to other PRE herbicides and an untreated control. Gladiolus injury was generally greatest with oxyfluorfen, clomazone, imazapic, or imazamox. Visible injury with other herbicides was low, although small necrotic leaf lesions were occasionally observed with some treatments. The number of flower stalks per plot, stalk height, and number of flowers per stalk did not differ between most treatments and the untreated control. Only pendimethalin controlled giant foxtail (*Setaria faberi* Herrm.) greater than 80% in both years. Control of common ragweed (*Ambrosia artemisiifolia* L.) was 80% or greater in both years with flumioxazin, mesotrione, halosulfuron, and linuron. Halosulfuron and sulfentrazone controlled yellow nutsedge (*Cyperus esculentus* L.) at least 70% in both years, but several herbicides did reduce the nutsedge population as compared to the untreated control. In the second study, flumioxazin was applied at four rates and in mixture with metolachlor. A comparison treatment of oryzalin plus isoxaben and an untreated control were also included. Gladiolus injury was greatest with 560 g ai/ha flumioxazin. Weed control was generally acceptable with flumioxazin at 140 g/ha or greater. Gladiolus height and the number of flowers per plant did not differ between flumioxazin rates and the control.