

WEED CONTROL AND TOMATO CULTIVAR SENSITIVITY TO THIFENSULFURON-METHYL. Douglas Doohan and Joel Felix, Associate Professor and Research Associate, Department of Horticulture and Crop Science, The Ohio State University, Ohio Agricultural Research and Development Center (OARDC), Wooster, OH 44691.

Thifensulfuron-methyl is a sulfonylurea herbicide registered for use on wheat, barley, oats, field corn, and soybean with a potential for use on tomato. Applied postemergence on transplanted tomato, thifensulfuron-methyl will control emerged triazine resistant common lambsquarters, common purslane, Pennsylvania smartweed, and red root pigweed. This research was conducted to determine the tolerance of processing tomato varieties currently used in the Midwest and those being developed for future release. Experiments were conducted at the OARDC in Wooster. A split-plot design with four replications was used. Tomato varieties were 'TR-12224469-99', '401401TJ', '611-61103', '46TJ0203', '111-111-2001-02', '9704-5116TCS', '818-818TJ01-03', and '331-BF04T005-04'. A blanket application of *s*-metolachlor (1.33 pt/a) was applied to all plots before tomato transplanting. Thifensulfuron-methyl was applied (0, 8, and 16 oz product/A) postemergence 3 weeks after tomato transplanting. Non-ionic surfactant was included in the spray mix at 0.25% V/V. Tomato plants were evaluated for injury (chlorosis, fullness of the row, and stunting) at 1 and 3 weeks after application. Plants were grown to maturity and yield (tons/A) was determined.

Severe injury was observed starting 3 days after thifensulfuron-methyl application on tomato variety coded 'TR-12224469-99' in 2006. Seven days after application stunting of this variety was 34 and 43%, for 8 and 16 oz/A, respectively. The injury was characterized by yellowing of the sprayed leaves as well as new growth and leaf mottling. Plants quickly grew out of this injury, and evaluations done 6 weeks after treatment indicated only minor yellowing of new leaves on varieties coded 'TR-12224469-99' and '111-111-2001-02'. Higher tomato marketable yield was observed in thifensulfuron-methyl treated plots compared to plots treated only with Dual Magnum, and 'TR-12224469-99' was among the high yielding varieties in this study. Results in 2006 varied somewhat from those reported for 2005. Chlorosis was not observed. Stunting was apparent on most varieties in the test and was still highly visible 3 WAT except variety '611-61103'. Although total yield was similar across thifensulfuron-methyl treatments, harvest index was slightly reduced in all varieties.