

MESOTRIONE CARRYOVER INJURY TO CARROT, ONION, CABBAGE AND CUCUMBER. Darren E. Robinson and John O'Sullivan, Assistant Professor, Ridgetown College, University of Guelph, Ridgetown, ON, N0P 2C0, and Professor, Department of Plant Agriculture, University of Guelph, Simcoe, ON, N3Y 4N5.

The effects of mesotrione residues on visual injury, plant dry weight, and yields varied among various vegetable crops planted one year after herbicide application in field trials conducted in Ridgetown, Ontario and Simcoe, Ontario in 2003 and 2004. In the first year of the study, mesotrione was applied preemergence at rates of 175 and 350 g a.i. ha<sup>-1</sup>, or postemergence at rates of 100 and 200 g a.i. ha<sup>-1</sup> to field corn. An untreated, weed-free check was included as a comparison. In the second year of the study, carrot, onion, cabbage and cucumber were planted into the trial area, and maintained weed-free for the entire growing season. Visual injury was measured 7, 14 and 28 days after emergence, dry weights were taken from plants sampled at 28 days after emergence, and final yields were measured for all crops in all treatments. At either location, the order of tolerance was carrot < onion < cabbage = cucumber. In all crops except carrot, significant reductions in biomass were observed. Significant yield reductions were observed in cabbage and cucumber, but not in onion. Onion, cabbage and cucumber should not be grown the year following application of mesotrione. Though dry weight and yield of carrot were not less in any of the mesotrione treatments than in the untreated check, some visual injury was observed. Caution should be used when growing carrot one year after application of mesotrione, depending on differences in weather and soil characteristics.