

EFFECTS OF SOIL INSECTICIDES ON FIELD CORN TOLERANCE TO POSTEMERGENCE APPLICATIONS OF MESOTRIONE. Scott C. Ditmarsen*, Steven Nolting, Mark A. Peterson, Sarah Taylor-Lovell, and Larry G. Thompson. Dow AgroSciences, LLC, Indianapolis, IN 46268.

Field experiments were conducted at five Midwest locations in 2002 to evaluate the effects of various soil insecticide treatments applied at planting on the tolerance of field corn to subsequent postemergence applications of mesotrione plus atrazine. Insecticide treatments included: chlorpyrifos (Lorsban 15G) at 1X (11.25 g ai/100m of row) and 4X; terbufos (Counter 20CR) at 1X (11.25 g ai/100m of row) and 4X; and tefluthrin (Force 3.0G) at 1X (1.125g ai/100m of row). All insecticide treatments were applied in-furrow. Treatments with no insecticide were included for comparison. Herbicide treatments included postemergence applications of mesotrione + atrazine at 1X (105 + 280 g ai/ha), 2X, and 4X rates and mesotrione alone at the 4X (105 g ai/ha) rate, all applied at the V4 stage of corn growth. All herbicide treatments contained crop oil concentrate at 1.0% v/v and urea-ammonium nitrate solution (UAN 28%) at 2.5% v/v. Visual crop injury evaluations were taken at 0, 3, 7, 14, and 28 days after herbicide application.

The highest level of corn injury was noted at approximately 1 week after herbicide application. Symptoms were mainly an irregular loss of pigmentation in the treated foliage and some growth inhibition. Results of these studies showed that postemergence application of mesotrione + atrazine caused significantly less crop injury following application of chlorpyrifos or tefluthrin than terbufos. Injury from a 2X application rate of mesotrione + atrazine 1 week after application averaged 4, 7, 7, and 19% following treatments of no insecticide, 1X tefluthrin, 1X chlorpyrifos, and 1X terbufos, respectively.