

COMPARING MESOTRIONE, TEMBOTRIONE, AND TOPRAMEZONE. Rich Zollinger and Jerry L. Ries, Professor and Research Specialist, Department of Plant Sciences, North Dakota State University, Fargo, ND 58105-5051.

Replicated field research was conducted in 2006 to evaluate efficacy of mesotrione, tembotrione, and topramezone applied at 1X and 0.75X rates and with basic pH blend, MSO-type, and basic pH blend plus MSO-type adjuvants. No herbicide treatments caused visual corn injury. All treatments completely controlled redroot pigweed, common lambsquarters, wild mustard, kochia, hairy nightshade, and common cocklebur through the growing season. The weeds that were not completely controlled were yellow foxtail, wild buckwheat, and common ragweed. The following summary statements are from the 28 day after application evaluation. Adjuvant enhancement of all three herbicides were MSO>basic pH blend=MSO + basic pH blend. Wild buckwheat control was less than 40% with all three herbicides. However, adding 0.38 lb/A of atrazine to all three herbicides gave complete control. Mesotrione gave less yellow foxtail control (65%) than tembotrione and topramezone (88 and 92%). Mesotrione gave less common ragweed control (52%) than tembotrione and topramezone (94 and 97%). Tembotrione gave approximately 10% points greater yellow foxtail control at 1X than at 0.75X (89, 80%) but there was no difference in control with topramezone at either rate (92, 91%). In another study mesotrione, tembotrione, and topramezone were each applied at the 1X rate with MSO adjuvant with atrazine at 0.38 lb/A, or foramsulfuron + safener at 0.53 oz/A, or a deposition + drift retardant adjuvant (In-Place) at 0.75 fl oz/A. Foramsulfuron applied with mesotrione improved yellow foxtail control from 57 to 90% and control was greater than with atrazine or In-Place. In-Place enhanced the activity of tembotrione or topramezone on yellow foxtail from 89 to 97% and control was greater than the other components. All three additives applied with mesotrione increased common ragweed control from 57 to 95%. Common ragweed control from tembotrione or topramezone applied alone was 95%. Adding any of the other three additives to topramezone slightly increased control.