COMPARISON OF GRASS SPECTRUM FOR AE 0172747, MESOTRIONE, AND TOPRAMEZONE AS INFLUENCED BY ADJUVANTS.

Mark A. Waddington and Bryan G. Young, Graduate Research Assistant and Professor, Department of Plant, Soil, and Agricultural Systems, Southern Illinois University, Carbondale, IL 62901.

The experimental herbicide AE 0172747, along with mesotrione and topramezone are HPPD-inhibiting herbicides for postemergence grass and broadleaf control in corn. Greenhouse research was conducted to evaluate the efficacy of these herbicides on large crabgrass, giant foxtail, shattercane, and fall panicum at the 2- to 3- and 4- to 6- leaf growth stages. A rate titration (1/32 to 2X the normal use rate) for each herbicide was used in combination with the adjuvants nonionic surfactant (NIS), crop oil concentrate (COC), or methylated seed oil (MSO). Data on foliar dry weight at 14 days after treatment was analyzed using regression and the R software.

Of the herbicides tested, AE 0172747 and topramezone had a wider spectrum of grass activity than mesotrione. AE 0172747 had greater activity than topramezone or mesotrione on 2- to 3- leaf large crabgrass and shattercane, regardless of adjuvant. On 2- to 3- leaf giant foxtail, topramezone had greater activity than AE 0172747 or mesotrione, regardless of adjuvant. Similarly, topramezone had greater efficacy than AE 0172747 and mesotrione on 2- to 3- leaf fall panicum, but only when NIS or COC was used. Similar levels of herbicide efficacy were observed on 2- to 3- leaf fall panicum from applications of AE 0172747 and topramezone, when applied with MSO. When the herbicides were applied to 4- to 6- leaf large crabgrass, shattercane, and giant foxtail AE 0172747 had greater efficacy than topramezone or mesotrione in most instances. The use of MSO decreased these differences between the herbicides when applied to 4- to 6- leaf grasses. In general, herbicide combinations with MSO had the greatest activity, and the lowest level of herbicide activity was observed with combinations using NIS.