EVALUATION OF AE F130060 WITH DIFFERENT ADJUVANT CLASSES FOR WILD OAT CONTROL AND SPRING WHEAT RESPONSE. Angela J. Kazmierczak, Kirk A. Howatt, and Michael C. Smith, North Dakota State University, Fargo, ND 58102 and Bayer CropScience, Sabin, MN.

The purpose of this study was to evaluate adjuvant enhancement of AE F130060 (proposed common name mesosulfuron) efficacy and crop response. Mesosulfuron is a sulfonylurea chemical compound that requires addition of an adjuvant for maximum efficacy. Experiments were conducted at two locations in 2003: Fargo, North Dakota and Sabin, Minnesota. The study consisted of an untreated control, an herbicide control with no adjuvant, and nine adjuvant treatments. Experiment design was randomized complete block with three replicates. Each herbicide treatment included mesosulfuron at 17.5 g ai/ha. Adjuvant classes included basic pH blend, non-ionic surfactant, silicone surfactant, petroleum oil concentrate, methylated seed oil, methylated seed oil basic blend, and fertilizer. Crop safety (7 and 14 DAT and preharvest) and wild oat control (14 DAT and preharvest) were evaluated, and wheat was harvested at physiologic maturity. Injury manifested as slight stunting that was evident throughout the entire season. Efficacy and yield data could not be combined, because of differences in wild oat population between the two locations. Treatments containing methylated seed oil increased mesosulfuron control of wild oat by as much as 85% while only increasing crop response by 5 percentage points 7 DAT. Only methylated seed oil plus 28% nitrogen increased injury from mesosulfuron 14 DAT. Mesosulfuron plus methylated seed oil and 28% nitrogen provided exceptional wild oat control compared with mesosulfuron alone, resulting in 28% greater wheat yield at Fargo compared with mesosulfuron alone.

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