

MESOSULFURON PLUS ADJUVANTS FOR USE IN SPRING WHEAT. Kevin B. Thorsness\*, Dean W. Maruska, Jack D. Otta, Michael C. Smith, and Mary D. Paulsgrove, Technical Service and Field Development Representatives, Bayer CropScience, Research Triangle Park, NC 27709.

Mesosulfuron-methyl plus mefenpyr-diethyl is a new a postemergence wild oat herbicide that is being developed by Bayer CropScience. It will be formulated as a 2 WDG and will be marketed as SILVERADO™ Wild Oat Herbicide. Mesosulfuron-methyl will provide control of wild oat including ACC-ase resistant biotypes in spring wheat and durum wheat. An adjuvant system will be required with mesosulfuron-methyl for effective wild oat control. Rapid soil degradation of mesosulfuron-methyl will allow planting of wheat and barley 7 days after application. Sunflower, soybean, lentils, dry beans and peas can be planted 90 days after an application of mesosulfuron-methyl and sugarbeet, potato and canola can be planted after a 10-month interval.

Adjuvant screening trials were conducted in a greenhouse to identify the most effective adjuvants for use with mesosulfuron-methyl. Based on these results, the most effective adjuvants were further evaluated in field trials at multiple sites. Field trials were established to determine the best adjuvant system for controlling wild oat with mesosulfuron-methyl alone or tank mixed with broadleaf herbicides in spring wheat. Adjuvant classes tested were; surfactants, silicone surfactants, crop oil concentrates, basic blends, methylated seed oils, methylated seed oil basic blends, and methylated seed oils with organosilicone surfactants. Crop tolerance and wild oat efficacy were evaluated for all treatments.

Percent visual crop injury was acceptable with mesosulfuron-methyl, regardless of the adjuvant system. However, percent visual wild oat control with mesosulfuron-methyl was influenced by adjuvant and adjuvant class. In general, methylated seed oil or basic blend adjuvants combined with mesosulfuron-methyl provided the best control of wild oat. Based on these results mesosulfuron-methyl is adjuvant and adjuvant class sensitive. Therefore an approved list of adjuvants that can be utilized with mesosulfuron-methyl will be developed.

Mesosulfuron-methyl will provide growers with an important tool for wild oat management including ACC-ase resistant wild oat in spring wheat and durum wheat.