GRAIN SORGHUM RESPONSE TO SAFLUFENACIL. Phillip W. Stahlman, John C. Frihauf, Patrick W. Geier and Loretta Serafin, Professor, Graduate Research Assistant, and Assistant Scientist, Kansas State University Agricultural Research Center, Hays, KS 67601 and District Agronomist, New South Wales Department of Primary Industries, Calala NSW 2340.

Field experiments were conducted near Hays, Colby, and St. John, KS in 2007 and 2008 and near Somerton, NSW Australia in 2007 to evaluate weed control effectiveness (six experiments) and grain sorghum tolerance (eight experiments) to soil-applied saflufenacil (BAS 800H) alone and in mixture with dimethanamid-P. The two herbicides were tank mixed at ratios of 1:8.8 in 2007, but a prepackaged mixture in the same ratio (BAS 781H) was used in 2008. Soil types ranged from fine sandy loam with <1% organic matter to silty clay loam with ~2.5% organic matter. Herbicide use rates generally ranged from 188 to 250 g ha^{-1} of saflufenacil to 1650 to 2200 g ha^{-1} of dimethenamid-P. Rates were adjusted for soil texture and organic matter content. In addition to comparing herbicide use rates, most experiments in 2007 also compared 7-10 day preplant and preemergence application timings, whereas treatments in weed-free crop tolerance experiments in 2008 were applied only preemergence. Greater visible crop injury (foliar necrosis, reddish stripes, and planting stunting) occurred on coarse-textured, low organic matter soils than on medium or fine textured soils when rainfall was received preceding or at the time of crop emergence. Few or no foliar symptoms or plant stunting were observed following gentle to moderate rainfall within a few days after crop emergence, especially on medium and fine textures soils. Often, injury was limited to a few individual plants growing next to unaffected plants. Most injured plants eventually recovered completely and produced grain. Crop yields seldom were reduced. Weed control usually exceeded 90% at mid-season and often was slightly higher for preemergence application compared to 7-10 day preplant applications. Grass weed control generally declined earlier than broadleaf weed control. The results of these experiments indicate promising potential for the use of saflufenacil and dimethenamid-P mixtures in grain sorghum.

2008 North Central Weed Science Society Proc. 63:163.