ENHANCING SAFLUFENACIL WITH ADJUVANTS AND TANK-MIX PARTNERS. Angela J. Kazmierczak, Richard K. Zollinger, and Jerry L. Ries, Research Associate, Professor, and Research Associate, Department of Plant Sciences, North Dakota State University, Fargo, ND 58108-6050.

Saflufenacil was recently registered for preemergence weed control in several crops, including corn, soybean, wheat, field pea, and chickpea. Two field experiments were conducted to evaluate 1) herbicide programs in soybean and 2) adjuvant systems that enhance saflufenacil efficacy. An experiment was established at Buffalo, ND to evaluate herbicide programs. Early pre-plant treatments included glyphosate (870 g ae/ha) alone or with imazethapyr (696 g/ha), saflufenacil (25 g/ha) alone and with imazethapyr (95 g/ha), 2, 4-D ester (560 g/ha), and pendimethalin (1070 g/ha). A POST application of glyphosate (870 g ae/ha) was made to all plots. Treatments that included saflufenacil alone provided greater than 90% control of common lambsquarters, kochia, and biennial wormwood 19 and 35 d after PRE treatments (DAT). However, all treatments provided 99% control of shepherd's-purse, marshelder, redroot pigweed, and prostrate knotweed 35 DAT. An experiment established at Mapleton, ND evaluated salflufenacil (12.5 g/ha) which was applied with glyphosate (320 g ae/ha), ammonium sulfate (810 g/ha), and various adjuvants. POST applications were made to flax (*Linum usitatissimum*), quinoa (*Chenopodium quinoa*), tame buckwheat (*Fagopyrum esculentum*), amaranth (*Amaranthus hypochondriacus* L., x *Amaranthus hybrid)*, and kochia (*Kochia scoparia* (L.) Schrad.). In general, treatments that included a methylated seed oil (MSO) or a high surfactant oil concentrate (HSOC) provided the greatest control on all species with the exception of tame buckwheat where Succeed (MSO) provided 75 and 83% control, 7 and 21 DAT, respectively. At both ratings, treatments that included Persist Ultra (MSO) or Succeed provided greater than 68% control with the exception of kochia where 63% control was the highest rating determined.

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