

WEED CONTROL IN 'EXPRESSSUN' SUNFLOWER, PRO'S AND CON'S. Curtis Thompson, Brian Olson, Alan Schlegel, and John Holman, Professor, Assistant Professor, Professor, and Assistant Professor, Southwest Research Extension Center, Garden City, Northwest Research Extension Center, Colby, Southwest Research Extension Center, Tribune and Garden City, Kansas State University, 4500 E. Mary, Garden City, KS 67846.

There are few herbicides registered for use in sunflower and even fewer options for postemergence broadleaf weed control in sunflower. The objectives of these experiments were to evaluate tribenuron for postemergence broadleaf weed control in 'ExpressSun' sunflower and to evaluate crop response to tribenuron.

'ExpressSun' sunflower, Pioneer 63N81 was planted in 30 inch rows at 17,000 seeds/A into silt loam soil at Colby, KS on June 11, at 24,000 seeds/A into silt loam soil at Tribune, KS on June 4, and at 18,000 seeds/A into silt loam soil at Garden City, KS on June 6, 2007. Preemergence treatments, pendimethalin and sulfentrazone were applied June 16 at Colby, June 4 at Tribune and June 7, 2007 at Garden City. Tribenuron 'Express SG' formulation was applied at 0.125, and 0.25 oz ai/A tank mixed with 0.88 oz ai quizalofop and 1.5 pt COC to 4 to 7-leaf sunflower on July 5 at Colby, June 26 at Tribune, and July 4 at Garden City. The two postemergence tank mixes, were applied with or without each of the two preemergence treatments, pendimethalin or sulfentrazone. Treatments at Colby were applied with a sprayer delivering 15 gpa while treatments at Garden City and Tribune were applied with a backpack sprayer delivering 20 gpa for preemergence treatments and 10 gpa for postemergence treatments. All experiments were arranged as a RCB design with three or four replicates.

No sunflower injury was observed in the Colby experiment. Sunflower chlorosis was observed with tribenuron at all rates in the Garden City and Tribune experiments. No injury was observed from any other treatment. Observed injury did not affect growth and development of the sunflower.

Tribenuron controlled Russian thistle, common puncturevine, and tumble pigweed 90% or more at all locations. Palmer amaranth control with tribenuron was less than 50% at Garden City regardless of rate because of the presence of ALS-resistant Palmer amaranth. Treatments containing sulfentrazone controlled Palmer amaranth 90% or more. Volunteer wheat was controlled with all postemergence treatments because they contained quizalofop.

Tribenuron will provide broad spectrum broadleaf weed control in 'ExpressSun' sunflower. However the greatest limitations of the tribenuron system are ALS-resistant weed species. Tribenuron will not control ALS-resistant weeds. Also, tribenuron must be tank mixed with a grass herbicide to control grass weed species postemergence in sunflower.