

DUPONT EXPRESSUN TRAIT WITH PIONEER '63N81' NUSUN SUNFLOWER HYBRID AND DUPONT HERBICIDE SYSTEMS. James D. Harbour, Michael T. Edwards, Robert N. Rupp, Jeff H. Meredith, and Eric Hoelt, Field Development Representatives and Product Development Manager, DuPont Crop Protection, Wilmington, DE 19802, and Research Scientist, Pioneer Hybrid International, Inc., Johnston, IA, 50131.

In 2007, fourteen tests were conducted to determine DuPont ExpressSun trait system and Pioneer '63N81' NuSun hybrid tolerance and weed efficacy to tribenuron-methyl herbicide. The objectives were two-fold; 1) determine crop response of Pioneer '63N81' sunflower hybrid, which contains the ExpressSun trait, to single and sequential tribenuron-methyl herbicide applications; and 2) determine crop response of Pioneer '63N81' sunflower hybrid and weed efficacy to pre-emergence herbicides followed by a single post-emergence application of tribenuron-methyl herbicide. Herbicides were applied pre-emergence and / or as a single or sequential applications to V4 to V8 growth stage Pioneer '63N81' sunflower hybrids using small-plot sprayers. Crop response and weed efficacy was recorded

Crop response was minimal, for the first objective, and transient. Kochia control was 83% with the single application of tribenuron-methyl at 0.125 oz ai/a. However, kochia control increased to 95-98% with the single application of tribenuron at 0.25 oz ai/a or with the sequential applications of tribenuron (0.125 oz ai/a followed by (fb) 0.125 oz ai/a, and 0.25 oz ai/a fb 0.25 oz ai/a). Tumble pigweed control was 80% with the single application of tribenuron-methyl at 0.125 oz ai/a, but tumble pigweed control increased to >96% from the single application of tribenuron at 0.25 oz ia/a or the sequential tribenuron applications.

For the second objective, herbicide program trials containing a pre-emergence herbicides (pendimethalin or sulfentrazone) followed by a single post-emergence application of tribenuron (0.125 and 0.25 oz ai/a) exhibited crop response (23%) at a TX location, but injury symptoms were determined to be from the pre-emergence application of sulfentrazone. Pre-emergence herbicides followed by post-emergence tribenuron at either rate provided control of tumble pigweed (99%), redroot pigweed (>93%) and velvetleaf (>95%). Without pre-emergence herbicides, velvetleaf control was 57% with tribenuron-methyl applied post-emergence at 0.125 oz ai/a, but controlled improved to 100% with tribenuron-methyl at 0.25 oz ai/a. Tribenuron-methyl at either 0.125 or 0.25 oz ai/a controlled jimsonweed and puncture vine.