

EFFICACY OF GLUFOSINATE PLUS FOMESAFEN MIXTURES ON GIANT RAGWEED, COMMON LAMBSQUARTERS AND VOLUNTEER CORN. Chad B. Brabham and William G. Johnson, Graduate Student and Professor, Department of Botany and Plant Pathology, Purdue University, West Lafayette, IN 47907.

Giant ragweed (*Ambrosia trifida*), common lambsquarters (*Chenopodium album*) and glyphosate resistant volunteer corn (*Zea mays*) are commonly found in Midwest soybean fields after POST glyphosate application. Glufosinate has recently become a viable alternative to glyphosate but with varying effectiveness on broadleaf weeds the addition of fomesafen to glufosinate could increase overall control. Two field studies near Lafayette, IN were conducted in 2009 to determine the effectiveness of fomesafen and glufosinate tank mixtures on the aforementioned weeds ranging from 10 to 20 cm in height. Glufosinate was applied alone, sequentially or with fomesafen (Flexstar) at 0.0, 0.061, 0.122, 0.183, 0.244, 0.305, 0.61, and 1.22 lbs ai/a. At 21 days after treatment height and dry weights were recorded for individual harvested plants. Data were subjected to a joint analysis and lsmeans were compared to determine the effects of treatments. Fomesafen rates greater than 0.244 lbs/a and treatments with glufosinate controlled giant ragweed 89 to 99%. All treatments with glufosinate were highly effective on corn. Control of common lambsquarters with fomesafen did not exceed 30%, however, the addition of glufosinate reduced height and weight by at least 70%. Treatments of glufosinate plus fomesafen at 0.061 and 0.183 lbs/a or a sequential glufosinate application provided the best overall control of all species and ranged from 80 to 100%. Tank mixtures resulted in mainly an additive response, but antagonism did occur on common lambsquarters with fomesafen at rates of 0.122, 0.305 and 1.22 lbs/a mixed with glufosinate. Tank mixtures could be effective where giant ragweed and volunteer corn are problematic while sequential treatments of glufosinate may be needed to control common lambsquarters.