

FALL-APPLIED AND PREPLANT HERBICIDES OF CONTROL OF HORSEWEED IN SOYBEAN. Geoffrey D. Trainer*, Mark M. Loux, and Anthony F. Dobbels, Graduate Research Assistant, Associate Professor, and Research Associate, Department of Horticulture and Crop Science, The Ohio State University, Columbus, OH 43210.

Horseweed is an increasing problem in Ohio because of reduced tillage and the development of resistance to ALS-inhibiting herbicides. Field and greenhouse studies were conducted in 2001 and 2002 to determine: a) the effectiveness of herbicides applied in fall and spring for control of ALS-resistant horseweed in soybeans, and b) the response of 52 horseweed populations to foliar applications of cloransulam. In the first study, various preplant herbicides were applied with 2,4-D ester in November of 2001 or early April of 2002, when horseweed seedlings were less than 3 cm in diameter. When applied in the fall, imazaquin, sulfentrazone, metribuzin, flumioxazin, and flumetsulam controlled 73 to 80% of the horseweed 28 WAT, while control with glyphosate, chlorimuron plus sulfentrazone, or cloransulam did not exceed 65%. Early-spring application of chlorimuron plus sulfentrazone, sulfentrazone, flumioxazin, metribuzin, and imazaquin controlled greater than 90% of the horseweed 59 DAT, while control with glyphosate, flumetsulam, and cloransulam ranged from 83 to 89%. Fall application of metribuzin, imazaquin, and sulfentrazone resulted in horseweed population densities of 13 to 17 plants/m² 28 WAT, but densities were 44 to 78 plants/m² for all other fall treatments. Early-spring application of chlorimuron plus sulfentrazone, flumioxazin, metribuzin, cloransulam, or sulfentrazone resulted in horseweed population densities of 0 to 5 plants/m², while densities for all other treatments ranged from 9 to 23 plants/m². In a second study, herbicides were applied in early May of 2002, when the horseweed was 7 to 15 cm tall. Treatments controlling at least 90% of the horseweed 30 DAT included glyphosate alone or in combination with 2,4-D or one of several preplant soybean herbicides, or a combination of 2,4-D plus metribuzin. In greenhouse studies, approximately 85% of the horseweed populations exhibited some degree of resistance to cloransulam. Response of the 52 populations to a foliar application of cloransulam at 52 g/ha was as follows: 0 to 20% control – 8 populations; 21 to 40% control – 21 populations; 41 to 60% control – 12 populations; 61 to 80% control – 3 populations; and 81 to 100% control – 8 populations.