

COMMON WATERHEMP CONTROL IN SOYBEAN WITH METOLACHLOR PLUS FOMESAFEN OR METRIBUZIN. Michael Duff, Kassim Al-Khatib, and Dallas E. Peterson, Graduate Research Assistant, Professor, and Professor, Department of Agronomy, Kansas State University, Manhattan KS 66502.

Common waterhemp is a troublesome weed throughout the Midwestern states. Control of common waterhemp in conventional soybean has become difficult, especially where acetolactate synthase (ALS)-inhibitor herbicides and/or protoporphyrinogen oxidase (protox)-inhibitor herbicide resistance has developed. Early research at Kansas State University, however, has indicated that a tank mix of metolachlor plus fomesafen could potentially control ALS- and Protox-resistant waterhemp. Field experiments were conducted near Sabetha and Manhattan, KS in 2005 to determine the efficacy of metolachlor tank mixed with fomesafen on waterhemp in soybean. Preemergence treatments included metolachlor + fomesafen at 0.91 + 0.22, 1.21 + 0.28, 1.52 + 0.36, and 1.82 + 0.43 kg ha⁻¹ and metolachlor + metribuzin at 0.55 + 0.14 kg ha⁻¹. These treatments were applied alone or followed by a postemergence glyphosate application at 0.88 kg ha⁻¹. Postemergence glyphosate alone at 0.88 kg ha⁻¹ was also included for comparison. Visual injury ratings were determined 2, 4, and 8 weeks after treatment (WAT) on a scale of 0% = no injury, and 100% = mortality. Metolachlor + fomesafen, regardless of the rate, gave complete waterhemp control at 2 WAT and greater than 95% waterhemp control by 8 WAT at Sabetha. Metolachlor + fomesafen at the Manhattan location had control greater than 88% at 2 WAT and greater than 60% at 8 WAT, respectively. Metolachlor + metribuzin controlled 91 and 59% of waterhemp 8 WAT at Sabetha and Manhattan, respectively. Applying a single postemergent application of glyphosate after metolachlor + fomesafen or metolachlor + metribuzin resulted in greater than 95% control of waterhemp 8 WAT regardless of location. Season-long control of waterhemp can be achieved with metolachlor + fomesafen at 1.52 + 0.36 kg ha⁻¹ with or without a postemergent application of glyphosate.