RESCUE TREATMENTS FOR PALMER AMARANTH CONTROL

A.B. Denton
D.M. Dodds
C.A. Samples
M.T. Plumblee
L.X. Franca
A.L. Catchot
T. Irby
J.A. Bond
D.B. Reynolds
Mississippi State University
Mississippi State, Mississippi

Abstract

An experiment was conducted at Hood Farms in Dundee, MS and at the Delta Research and Extension Center in Stoneville, MS in 2015 to determine the effect of multiple herbicide applications and timing programs on glyphosate-resistant-Palmer amaranth control. The experiment was initiated in fields with heavy natural infestations of GR-Palmer amaranth. Applications were initiated when Palmer amaranth plants were 20 to 25 cm in height as well postponing additional initial applications for two and four weeks after the original application timing. Herbicide programs in which two applications were made, the second application was made two weeks or four weeks after the initial application regardless when treatments were initiated. Herbicide programs in which three applications were made, the third application was made two weeks after the second application regardless when treatments were initiated. Treatments utilized in this experiment included: glyphosate + dicamba at 0.8 kg ae/ha and 0.6 kg ai/ha; glufosinate + dicamba at 0.6 kg ai/ha each; glyphosate + 2, 4-D at 0.8 kg ae/ha and 1.1 kg ae/ha; glufosinate + 2, 4-D at 0.6 kg ai/ha and 1.1 kg ae/ha. At the second application timing, the tank mix of glyphosate + 2,4-D provided significantly greater height reduction (45%) than all other tank mixes. Two weeks after final application, tank mixes containing glufosinate provided significantly greater visual control (≥85%) than those containing glyphosate when pooled across all timing programs. Multiple applications significantly increased visual control compared to single application programs two weeks after final application. In multiple application programs, keeping the interval between applications to two weeks significantly increased visual control up to four weeks after final application compared to longer sequential application intervals. Multiple applications of any of the herbicide combinations tested were needed to control GR-Palmer amaranth in a rescue application scenario.