

INFLUENCE OF WEED SIZE ON PALMER AMARANTH AND PITTED MORNINGGLORY CONTROL WITH COMBINATIONS OF GLUFOSINATE, DICAMBA, AND 2,4-D**J.K. Norsworthy****University of Arkansas/Division of Agriculture
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Since the mid-1990s, there has been a major decrease in the rate of discovery and labeling of new herbicides. The current focus of many companies is development of herbicide-resistant trait technologies such as 2,4-D and dicamba resistance by Dow AgroSciences and Monsanto, respectively. These technologies could soon be labeled in some agronomics crops and may be stacked with glufosinate resistance to aid in managing glyphosate-resistant weeds and other hard-to-control weeds. Glyphosate-resistant Palmer amaranth and pitted morningglory, which exhibits some tolerance to glyphosate, are two of the most common and troublesome weeds of crops in the Midsouth. Research was conducted in 2010 to determine the influence of weed size at application on glyphosate-resistant Palmer amaranth and pitted morningglory control with glufosinate, dicamba, and 2,4-D alone and the use of glufosinate tankmixed with either auxin-type herbicide. Glufosinate at 0.48 lb ai/A, dicamba at 0.5 lb ae/A, 2,4-D at 1.0 lb ae/A, and combinations at the same rates were applied to Palmer amaranth and pitted morningglory at 3, 10, 16, 20, 24, and 27 days after weed emergence in the field. *S-metolachlor* was included with all herbicide treatments to minimize the number of seedlings emerging after application because the focus of the project was to understand the postemergence activity of the evaluated treatments. All herbicides alone provided >90% control of six inch or smaller Palmer amaranth. For large Palmer amaranth, which was 13 to 36 inches tall at application, glufosinate plus 2,4-D provided $\geq 90\%$ control, which was slightly greater than control obtained with glufosinate plus dicamba. No herbicide alone was effective on large Palmer amaranth. All herbicides alone or combinations were effective on pitted morningglory, regardless of size at application, except dicamba alone on 26 inch long plants. For pitted morningglory, combinations generally provided more consistent control of large pitted morningglory.