## CONTROLLING PALMER AMARANTH WITH TANK MIXES OF GLUFOSINATE, DICAMBA, AND 2,4-D GL Priess JK Norsworthy JT Richburg ZD Lancaster ME Fogleman RC Scott University of Arkansas Fayetteville, AR

## <u>Abstract</u>

The evolution of protoporphyrinogen oxidase (PPO)-resistant Palmer amaranth has left only three active ingredients for postemergence control of PPO-resistant Palmer amaranth. Glufosinate, dicamba, and 2,4-D are the only in-crop over-the-top options remaining in cotton and soybean today. Two independent studies were conducted in a production field in Crawfordsville, AR in 2017. These studies evaluated control of PPO-resistant Palmer amaranth with 2,4-D, dicamba, and glufosinate applied alone, and 2,4-D applied in combination with two rates of glufosinate. Applications were made with a CO<sub>2</sub>-pressurized backpack at 3 mph calibrated to delivered 15 GPA through nozzles labeled for each herbicide. Two independent studies were conducted, one evaluated control of 5-inch tall Palmer amaranth and the other 16-inch tall Palmer amaranth. Two weeks after the initial application, a sequential application of the same treatment was applied. Palmer amaranth control ratings were taken weekly for five weeks after the first application. In the 5-inch Palmer amaranth study, the only acceptable level of control (100%) was achieved after the sequential application of the high rate of glufosinate+2,4-D. In the 16-inch Palmer amaranth trial, there was a large reduction of efficacy of control. However, the tank mixes of 2,4-D and glufosinate resulted in the highest level of control, three weeks after the sequential applications the high rate of glufosinate+2,4-D resulted in 98% Palmer amaranth control. Tank mixes of two effective modes of action often increased efficacy and should be incorporated into weed management programs when possible. Weed management programs that do not allow for tank-mixing two effective postemergence herbicide modes of action should utilize sequential applications.