VOLATILITY OF XTENDIMAX WHEN PRECEDED BY GLUFOSINATE OR AS A MIXTURE ON BAREGROUND AND OVER-THE-TOP APPLICATIONS IN XTENDFLEX COTTON

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Abstract

With the availability of the Engenia formulation of dicamba, growers may be provided another effective postemergence (POST) control option for problematic broadleaf weeds such as Palmer amaranth (*Amaranthus palmeri*) in XtendFlex cotton systems. Despite dicamba being an efficacious herbicide on broadleaf weeds, volatility of dicamba-containing products remains a primary concern in Arkansas crop production due to widespread injury mainly associated with susceptible soybean varieties (conventional, LibertyLink, and Roundup Ready). In order to investigate dicamba volatility as a function of groundcover and application timing of glufosinate, a hoop-house experiment was conducted in Fayetteville, Arkansas in 2018. Treatments were arranged in a two-factor factorial, with the first factor being groundcover, and the second being glufosinate application timing. Flats of soil were treated with 4X rates of dicamba and glufosinate, with 1X being 0.5 lb/A dicamba and 1X being 0.59 lb/A glufosinate. Each flat was placed into the respective hoop-house between two rows of soybean, which served as a bioindicator. At both 21 and 28 days after treatment (DAT), all treatments where dicamba followed a glufosinate application demonstrated greater injury to soybean regardless of groundcover. At 21 DAT, glufosinate followed by (fb) dicamba caused 21% injury and injury increased to 29% by 28 DAT. Treatments with glufosinate and dicamba applied as a mixture exhibited 29% and 37% injury at the respective ratings, which was more than when dicamba was preceded by glufosinate. Mixtures of glufosinate and dicamba broadcasted over XtendFlex cotton significantly increased the distance that dicamba volatilized and injured soybean.