COMPARISON OF SALVAGE TREATMENTS IN XTENDFLEX® COTTON

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Abstract

Rapid growth and interference of weeds allows them to compete for water, sunlight, and nutrients, and thus threaten the productivity of a cotton crop when not controlled early season. Effective postemergence (POST) herbicide control options can be limited because herbicide-resistant weeds are becoming more widespread and timely applications are sometimes challenging due to weather, time, and label constraints. A field trial was conducted at the Rohwer Research Station near Watson, Arkansas in 2017 to determine if glyphosate, glufosinate, and dicamba could be used to salvage an XtendFlex® cotton crop infested with weeds commonly found in Arkansas. Treatments were arranged in a two-factor factorial, with the first factor being herbicide combination and the second being POST timing. POST applications that included glyphosate as Roundup PowerMax (22 oz/A), glufosinate as Liberty (29 oz/A), or dicamba as Engenia (12.8 oz/A) were made alone or in combination to non-crop plots infested with 24-inch tall barnyardgrass (*Echinochloa crus-galli*) and 20-inch tall Palmer amaranth (*Amaranthus palmeri*), followed by (fb) a second application of the same product(s) either 7 or 14 days later. Weed control ratings were taken three weeks after the final treatment was applied. When dicamba plus glyphosate was applied fb the same treatment 7 and 14 days later, 81% and 75% control of Palmer amaranth was obtained, respectively. However, dicamba alone offered 96% control of Palmer amaranth at both second application timings due to intense competition from the remaining barnyardgrass. Acceptable levels of barnyardgrass control were unable to be achieved with any treatment. The highest numerical value for control of barnyardgrass (84%) was shown when dicamba plus glyphosate was applied and fb the same application 7 days later. Although this research demonstrates viable options to control large Palmer amaranth, it is important to continue to use preemergence herbicides and make timely POST applications.