USE OF AUXIN HERBICIDES OTHER THAN 2,4-D IN ENLIST COTTON

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Abstract

Tolerance for auxin herbicides other than 2,4-D has been observed in Enlist cotton. The use of multiple auxins to control problematic weeds such as Palmer amaranth may slow the evolution of resistance especially when used in applications with glufosinate. A two-factor factorial randomized complete block design experiment was conducted to evaluate the tolerance of Enlist cotton to other auxin herbicides and their control of Palmer amaranth, entireleaf morningglory, and common cocklebur using applications of fluroxypyr, triclopyr, and 2,4-D with and without glufosinate. Phytogen 360W3FG was planted at 40,000 seeds/acre and applications were made on 10-12" weed at 15 gallons per acre at 40 PSI. Weed control and visible injury ratings were taken weekly on a scale of 0-100% until 28 days after treatment (28 DAT). When applied alone, fluroxypyr and triclopyr were comparable to 2,4-D when applied to entireleaf morningglory and common cocklebur at 28 DAT, with all three auxins providing over 95% control. Mixing glufosinate with fluroxypyr and triclopyr increased control of Palmer amaranth compared to standalone applications of these herbicides, with all mixtures comparable to the 2,4-D plus glufosinate standard. Fluroxypyr alone was the most injurious to cotton at 14 DAT, averaging 7% visible injury. Treatments containing auxin herbicides plus glufosinate provided acceptable levels of control of all three target weed species with minimal injury to cotton, potentially offering producers another tool to help mitigate resistance when options are scarce.