COTTON WEED CONTROL IS IMPACTED BY INTERVAL BETWEEN SEQUENTIAL GLUFOSINATE APPLICATIONS

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Abstract

Auxin systems allow for effective management of glyphosate-resistant Palmer amaranth (*Amaranthus palmeri* S. Wats) but applying 2,4-D or dicamba near sensitive plants poses risks of off-target movement. Although glufosinate offers an alternative, overall control and consistency of these systems needs improvement. To meet this goal, an experiment conducted at five locations determined the most effective interval between sequential glufosinate applications. The split-plot design included 7 intervals between sequential applications (1, 3, 5, 7, 10, 14 d or no POST 2) and two herbicide options (glufosinate 656 g ai/ha alone or with glyphosate 1,261 g ae/ha). Combined over four locations, 18 cm tall Palmer was controlled over 97% with 1 to 7 d intervals, which was at least 13% higher than 10 or 14 d intervals. At the fifth location Palmer was 50 cm, an interval of 1 to 5 d controlled Palmer 89-93% compared to 75-79% with one of 7, 10 or 14 d. For 18 cm large crabgrass (*Digitaria sanguinalis* (L.) Scop.), an interval of 1 to 7 d noted at least 92% control compared to 81% or less control with one of 10 or 14 d. Adding glyphosate with glufosinate had little impact on Palmer but improved grass control when glufosinate alone provided less than 92% control. Weed biomass and densities at harvest noted results similar to weed control. Cotton seed yields were 4,397 kg/ha or more with intervals of 1 to 5 d when compared to those of 7 to 14 d at the large Palmer location.