

GLYPHOSATE-RESISTANT JOHNSONGRASS (*SORGHUM HALAPENSE*) CONTROL WITH ENVOKE, STAPLE LX, AND SELECT MAX IN COTTON

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Abstract

Glyphosate has allowed for more flexibility for managing weeds in Roundup Ready Cotton. As a consequence of relying on a single mode of action, glyphosate-resistant johnsongrass was confirmed in Arkansas and Louisiana in 2007 and 2010 respectively. In 2012, experiments were conducted at the LSU AgCenter Dean Lee Research and Extension Center near Alexandria, LA and the University of Arkansas in Fayetteville, AR to assess control options for johnsongrass in cotton with Envoke, Staple LX, and Select Max. Herbicides were applied to 6-inch johnsongrass (POST1) followed by 6-inch johnsongrass regrowth (POST2). Staple LX at 2.6 oz/A, Select Max at 16 oz/A, or Staple LX plus Select Max were applied as POST1 treatments. Sequential POST2 applications consisted of Envoke at 0.15 oz/A, Select Max at 16 oz/A, or Envoke plus Select Max. Johnsongrass was assessed weekly after each application.

Select Max provided 93% control of johnsongrass 14 and 28 days after (DA) POST1, whereas Staple LX provided 81% and 74% control 14 and 28 DA POST1, respectively. Co-application of Select Max plus Staple LX provided 88% control 14 and 28 DA POST1. Select Max and Staple LX plus Select Max controlled johnsongrass greater than Staple LX alone 14 and 28 DA POST1. The co-application of Staple LX and Select Max did not increase johnsongrass control greater than control provided by Select Max alone 14 and 28 DA POST1. Envoke provided 79% and 77% control 14 and 28 DA POST2, respectively and Select Max provided 95% and 92% control 14 and 28 DA POST2, respectively. Co-application of Envoke plus Select Max provided 88% and 85% control 14 and 28 DA POST2 respectively. Select Max provided greater johnsongrass control than Envoke or Envoke plus Select Max 14 DA POST2. In addition, the co-application of Envoke and Select Max provided greater johnsongrass control than Envoke alone. Select Max and Envoke plus Select Max controlled johnsongrass greater than Envoke alone 28 DA POST2. Differences in Select Max and Select Max plus Envoke were not observed at 28 DAT. A decrease in control was observed following the co-application of Envoke and Select Max as compared to Select Max alone which may indicate an antagonistic effect 14 DA POST2; however, this effect was not observed 28 DA POST2.

Staple LX and Envoke applied alone were not sufficient for acceptable johnsongrass control in cotton. Staple LX co-applied with Select Max does not improve efficacy on johnsongrass as compared to Select Max alone, but could potentially provide some broadleaf weed control. Envoke co-applied with Select Max provided a possible antagonism effect early, but did not enhance johnsongrass control. Select Max provided the best johnsongrass control; however, co-applications with Staple LX or Envoke could potentially provide a broader spectrum of weed control while maintaining acceptable johnsongrass control.