LIBERTYLINK AND ROUNDUP READY FLEX COTTON SYSTEMS FOR MISSISSIPPI

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Abstract

LibertyLink cotton offers an alternative to Roundup Ready and Roundup Ready Flex for over-the-top weed control in cotton. Research was conducted in 2008 in Starkville, MS, to (1) evaluate rates of glufosinate in sequential applications and (2) compare residual herbicides applied in programs with glufosinate in a LibertyLink weed control system. To evaluate glufosinate rates, sequential glufosinate applications were made to FiberMax 1735B2LL in the four- and 10-leaf cotton stages. Treatments included glufosinate at 0.4 followed by (fb) 0.4 lb ai/A, 0.53 fb 0.53 lb/A, 0.79 fb 0.79 lb/A, and 0.79 fb 0.53 lb/A. Phytogen 485 WRF received glyphosate at 0.77 fb 0.77 lb ae/A at the same stages. For residual herbicide evaluation, fluometuron at 1 lb ai/A was applied preemergence and followed by two applications of glufosinate at 0.4 fb 0.4 lb/A. Additionally, pyrithiobac (0.05 lb ai/A) or metolachlor (0.95 lb ai/A) were tank-mixed with the first glufosinate application (0.4 lb/A) and then followed by glufosinate alone (0.4 lb/A). Extremely dry conditions persisted at the site through the early portion of the growing season and precluded weed emergence. Therefore, few differences in visual control of tall waterhemp and barnyardgrass were detected. Furthermore, wet conditions during August reduced cotton yield. Glufosinate at 0.4 fb 0.4 lb/A provided effective control of tall waterhemp and barnyardgrass. Tall waterhemp and barnyardgrass were controlled at least 91% when fluometuron, pyrithiobac, or metolachlor were used in programs with glufosinate. All LibertyLink weed control programs were as effective as two applications of glyphosate in a Roundup Ready Flex system.