

EVALUATION OF HERBICIDE PROGRAM IN STRIP-TILLED ROUNDUP READY COTTON

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Abstract

This study was conducted on Dothan sandy loam (fine loamy siliceous, thermic Plinthic Kandiudult) at North Florida Research and Education Center, Quincy, FL in 1997. The objective of this study was to evaluate weed control in strip-tilled Roundup Ready cotton. Deltapine 5415 Roundup Ready cotton was planted notill plus in row subsoiled (strip-till) with a Brown Ro-till implement and KMC planters on June 16. Herbicides were applied broadcast and post-directed. Pre-emergence herbicides were applied 3 days after planting. Weed control ratings were made at 16, 30, 44 and 64 days after planting. The study was conducted in a completely randomized block design with four replications. Analysis of variance and least significant difference test were performed at 5% probability level. All herbicide treatments with Roundup Ultra, assessed at 64 days after planting (last observation), provided good weed control. Depending on the treatment, weed control was achieved at 72.5% - 91.3% for Nutsedge, 61.3% - 96.7% for Crabgrass, 58.8% - 85.0% for Morningglory species, 100% for Carpetweed, and 55.0% - 75.0% for Bermudagrass. The best nutsedge control was obtained with Roundup Ultra applied @ 1 pt/A (broadcast at 3rd leaf) fb (Bladex @ 1.5 pt/A + MSMA @ 1 pt/A - post-directed at 8th leaf) fb Roundup Ultra @ 1 pt/A (post-directed at 1st square). Best crabgrass control was achieved after an application of Cotoran @ 0.75 pt/A (broadcast pre-emergence) fb Roundup Ultra @ 1 pt/A (broadcast at 3rd leaf), fb post-directed at 8th leaf, and fb post-directed at 1st square). Morningglory and bermudagrass control were best obtained after an application of Roundup Ultra 1 pt/A (broadcast at 3rd leaf), fb broadcast at 8th leaf and broadcast at 1st square). Best control of Carpetweed, assessed at 44 days after planting, was achieved with the application of Roundup Ultra @ 1 pt/A (broadcast at 3rd leaf) fb (Bladex @ 1.5 pt/A + MSMA @ 1 pt/A - post-directed at 8th leaf) fb Roundup Ultra @ 1 pt/A (post-directed at 1st square). Cotton lint yield varied from 263 lb/A for the check plots to 1019 lb/A where Cotoran @ 0.75 pt/A (broadcast pre-emergence) fb Roundup Ultra @ 1 pt/A (broadcast at 3rd leaf), fb post-directed sprays at both 8th leaf, and at 1st square) was applied. Cotoran applied pre-emergence in a Roundup system resulted in higher yield than Prowl and Cotoran combinations in the same system. The standard

system of Prowl+ Cotoran pre-emergence fb Cotoran+MSMA early post fb Bladex+ MSMA had significantly lower yield and shorter plant height than all treatments having Roundup alone or in combination with residual herbicides. Weed control followed a similar trend with best control of all weeds coming from Roundup alone or in combination with residual herbicides. Generally, all herbicide treatments provided good weed control and contributed to increased lint yield. Roundup over the top as needed, past the 4th node stage gave slightly lower yields than Roundup applied as a directed spray after the forth node, but was not significantly lower.