

**ROUNDUP READY COTTON TOLERANCE TO
TOPICAL AND POST-DIRECTED
APPLICATIONS OF ROUNDUP ULTRA**
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retention, and yield were not different among treatments for these experiments.

Abstract

Research on Roundup Ready Cotton has noted that topical applications of Roundup Ultra (glyphosate) after the 4-leaf stage may affect reproductive development. Current label restrictions require applications after the four leaf stage to be post-directed. Post-directing heights may vary depending on equipment type, adjustment, and speed.

Field experiments were conducted in 1997 at the Black Belt Branch Experiment Station near Brooksville, MS, the Delta Branch Research Station near Stoneville, MS, and the Plant Science Center near Starkville, MS to evaluate Roundup Ready cotton (*Gossypium hirsutum*) tolerance to various topical and post-directed applications of Roundup.

Treatments in the topical tolerance trials were arranged in a randomized complete block design with 4 or 6 replications. Treatments were applied in a total delivery volume of 15 GPA. Treatments consisted of topical applications of 16, 24, and 32 fl oz of Roundup Ultra at the 6, 9, and 12 node growth stage following a topical application of 32 fl oz of Roundup Ultra at the 3 node stage. Under these conditions the treatments did not affect the number of nodes, plant height, number of bolls or squares, or total fruit retention. Yield was unaffected at two locations, but was reduced at the third location by 32 fl oz applied at the 3rd node followed by 32 fl oz at the 12th node. All other treatments did not affect seed cotton yield.

Treatments in the post-directed tolerance trials were arranged in a randomized complete block design with 4 replications. This experiment was conducted at two locations and treatments were applied in a total delivery volume of 15 GPA at both locations. Treatments consisted of post-directing 32 fl oz of Roundup at the base of the plant or up 25% of the plant height when plants were at the 6, 10, and 14 node growth stage. In addition Roundup was applied to 33% of the total plant height to plants in the 14th node stage of growth. An untreated check, 32 oz of Roundup applied topically at the 3rd node, and a post-directed application of Cotoran (fluometuron) followed by Caparol (prometryn) followed by Bladex (cyanazine) were also included as standards. Number of nodes, plant height, number of bolls or squares, total fruit retention, boll