

**ROUNDUP READY COTTON TOLERANCE
TO ROUNDUP ULTRA APPLIED AT VARIOUS
GROWTH STAGES**

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Abstract

Roundup Ready cotton has demonstrated excellent tolerance to Roundup (glyphosate) up to the 5-leaf stage. However, a limited number of studies in 1995 indicated Roundup reduced Roundup Ready cotton yield. Field studies were conducted in 1996 on the Texas High Plains to evaluate Roundup Ready cotton tolerance to single and sequential applications of Roundup Ultra applied postemergence-topical (PT) and postemergence-directed (PD). In one study, Roundup Ultra at 0.75 lb ae/A was applied PT at the 0 to 1 leaf state, PT at the 4 leaf stage, PD at the 9 to 10 node stage, or PD at the 14 node stage in single and sequential applications. In a second study, Roundup Ultra at 1.12 lb ae/A was applied PD at the 6, 10, or 14-leaf stage, or PD at the 10 leaf stage followed by PD at the 14 leaf stage. Basal applications or applications which covered the lower 25% to 33% of the cotton plants were made at each growth stage. In a third study, Roundup Ultra at 1.12 lb ae/A was applied PD at mid-bloom or PT at 5 NAWF, 8 NACB, and 4 NACB. 'RR Coker 312 X 1445' was used in all studies. PT applications were made with an air-pressurized small plot tractor and PD applications were made with a shielded postemergence-directed unit. All treatments were applied at 7.5 to 10 GPA using 8002 flat fan nozzles. Plots measuring 4 rows by 30 feet were replicated 6 times in a randomized complete block design. Plots were kept weed free and insects were intensely managed. All studies were irrigated as needed throughout the growing season.

No Roundup Ultra application adversely affected growth and development or cotton yield and quality. Cotton lint yield, which averaged 1005 lb/A, or quality did not differ from untreated plots. Plant height, nodes per plant, nodes to first fruiting branch, bolls at position 1, and first position bolls at fruiting branches 1 to 5 were not altered by Roundup Ultra applications. These studies indicate that Roundup Ready cotton exhibits excellent tolerance to Roundup Ultra if used according to the label.