

**EVALUATION OF ROUNDUP READY COTTON
VARIETIES IN MISSISSIPPI**

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– 942 lb/A, and DP 5415 – 850 lb/A (LSD = 203 lb/A). Boll retention was reduced in DPL 425 RR by the single post-directed application of Roundup.

Abstract

Research has shown that topical applications of Roundup (glyphosate) to glyphosate-tolerant cotton (*Gossypium hirsutum* L.) cultivars may decrease early-season boll retention at first position sympodia; however, topical applications of glyphosate to transgenic cotton typically do not reduce lint yield. The loss of early season fruit can be tolerated in most years when growing conditions permit reproductive development to be extended later in the season.

Field experiments were conducted in 1999 at the Delta Branch Experiment Station near Stoneville, MS, to evaluate Roundup Ready cotton tolerance to various applications of Roundup in comparison to conventional varieties with no Roundup application. Roundup Ready varieties were Deltapine DP 5415 RR, Paymaster 1220 RR, Sure-Grow 125 RR, and Deltapine DP 425 RR; conventional varieties were Deltapine DP 5415, Stoneville ST 474, Sure-Grow 125, and Sure-Grow 747. Soil type in the area was Bosket very fine sandy loam. Irrigated plots consisted of four 40-inch spaced rows, 40-foot long. Treatments were arranged in a randomized complete block design with four replications. A total spray volume of 20 GPA was used to apply Roundup treatments. Topical applications were applied utilizing a CO₂-pressurized backpack sprayer; post directed treatments were applied in conjunction with a Dickey cultivator system. Treatments on Roundup Ready cotton consisted of no Roundup, topical application of 32 fl oz/A of Roundup at the 2- to 3-leaf stage, topical application of 32 fl oz/A of Roundup at the 2- to 3-leaf stage followed by post directed application of 32 fl oz/A at the 7-node stage, and a single post directed application of 32 fl oz/A at the 7- node stage.

Lint yield for STV 474 was 1692 lb/A and was greater than all Roundup Ready varieties. Lint yield for DPL 425 RR was reduced by two applications of Roundup compared to the no-Roundup treatment, but not by either single application. PM 1220 RR, DPL 5415 RR, and SG 125 RR lint yields were not affected by Roundup. Lint yields for all varieties with no Roundup were as follows: STV 474 – 1692 lb/A, SG 747 – 1530 lb/A, SG 125 – 1500 lb/A, SG 125 RR – 1449 lb/A, DP 425 RR – 1322 lb/A, PM 1220 RR – 1287 lb/A, DP 5415 RR