

**ROUNDUP READY (GLYPHOSATE-TOLERANT)
ULTRA-NARROW ROW COTTON WEED
CONTROL AND PRODUCTION COSTS**

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Abstract

In 1999, eight ultra narrow row cotton trials were established across the belt to examine the effect of off label foliar salvage treatments of Roundup Ultra (glyphosate) with regard to yield and/or weed control. Site locations included Leland and Shelby, Mississippi, Belle Mina and Loxley, Alabama, Bakersfield, California, Lexington, South Carolina, and Amerst, Texas. Of the eight, six trials were conducted to determine if there were differences in yield and weed control across cotton varieties and/or locations between foliar salvage applications of Roundup Ultra at 8 leaf and area standard treatments. Area standard treatments included a pre emergence treatment suited to the area, followed by Roundup Ultra at 3-4 leaf (lf) followed by Staple (pyrithiobac) + Select (clethodim) at 8 leaf. Varieties included DP 458BR, PM1220BGRR, SG 125BR, DP 5415RR, DP 6100ACARR, DP 451BR and SG 501BR depending on location. In two of the trials, all varieties exhibited a reduction in yield by the salvage treatment. In one trial one variety of three tested showed a yield reduction by salvage treatment. In the three remaining trials, no yield differences were observed. In three of the trials, complete weed control for all species was observed between both herbicide treatments. Of the remaining trials, the salvage treatment provided complete control for all species with the exception of redvine (*Brunnichia ovata*) in Shelby, Mississippi. The area standard provided inadequate control of sicklepod (*Senna obtusifolia*) in Loxley, Alabama, redroot pigweed (*Amaranthus retroflexus*) in Bakersfield, California, nodding spurge (*Euphorbia nutans*), prickly sida (*Sida spinosa*), and redvine in Shelby, Mississippi. Of the eight trials, two were conducted with single variety by Roundup Ultra at several timing applications to observe different salvage treatment effects. Reductions in yield occurred in all off label applications past four leaf up to 20% cracked boll.

Introduction

Ultra narrow row cotton acres are an increasing phenomenon, due in part to the availability of Roundup Ready cotton. However, due to fruit retention questions, the present label

restricts Roundup Ultra application past the 4 leaf stage of cotton development to post-direct applications at the base of the plant. Though canopy closure restricts weed growth through crop competition, the duration between 4 leaf topical and the 20% cracked boll harvest aid treatment provides enough time for some weed escapes to occur. In an attempt to establish a threshold between weed control and yield, 8 leaf topical applications were tested, as this approximates the plant stage when canopy closure occurs.

Conclusion

- Salvage treatments with Roundup Ultra provided optimum weed control for all species except for redvine and extended the duration of weed control.
- Yield reduction by salvage treatment when compared to area standard treatments occurred in 3 out of 6 trials.
- Reductions in yield occurred in both timed application trials where Roundup Ultra was applied foliar after the 4th leaf, and prior to 20% cracked boll.
- No label changes should be made to allow for extending the foliar application past the 4 lf stage.