

**PERFORMANCE OF ROUNDUP READY  
(GLYPHOSATE-TOLERANT) COTTON  
CULTIVARS IN THE TEXAS HIGH PLAINS**

**Randy Boman, Mark Kelley, Wayne Keeling  
John Gannaway and Peter Dotray  
Texas Tech University, Texas Agricultural  
Experiment Station and Extension Service  
Lubbock, TX**

**Abstract**

Glyphosate-tolerant (Roundup Ready) stripper-type cotton cultivars are becoming more popular in the Texas High Plains. Cultivar sensitivity to over-the-top salvage type treatments is a major concern. This study was conducted to assess the agronomic performance of eight Roundup Ready cultivars in a systems-type testing program. A two-factor factorial experimental design was used. Field layout was a split-plot with three replications of treatments. Main plots consisted of 8 High Plains-type Roundup Ready cultivars (which resulted in 9 observations for cultivar main effect means). Subplots consisted of three Roundup Ultra treatments (which resulted in 24 observations for main effect means) and included: 1) untreated check; 2) grower standard system which consisted of 1 qt/acre applied over-the-top (OT) at the 4-leaf stage followed by a 1 qt/acre sequential treatment applied post-directed (PD) at the 14-node stage using a Red Ball hooded sprayer; and 3) salvage treatment of 1 qt/acre applied OT at the 14-node stage. Spray-grade ammonium sulfate was added to the Roundup Ultra spray mixture (17 lb/100 gallons). Main plot size was twelve 40-inch rows 30 ft long. Subplot size was four 40-inch rows 30 ft long. Plots were planted on May 20, and furrow irrigated three times. A June hail storm slightly damaged the trial. Plots were stripper harvested on October 30 with a plot-modified John Deere 482. No significant cultivar by Roundup Ultra system interactions were noted for lint yield or open boll percentage measurements on October 10. For main effect averaged across cultivars and replications, the grower standard system had no significant effect on lint yield or open boll percentage compared to the untreated check, however, the 14-node OT salvage system significantly reduced lint yield (-10%) and delayed maturity (-13%) compared to the untreated. Cultivar x system interaction restricted interpretation of main effects for boll size and seed per boll. However, when averaged over cultivars and replications, the grower standard system did not differ from the untreated check, but the 14-node OT salvage system reduced boll size (-9%) and seed per boll (-16%) compared to the untreated check.