

**PERFORMANCE OF ROUNDUP-READY™
VARIETIES IN THE CAROLINAS & VIRGINIA**

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Abstract

Deltapine Seed's 1998 Agronomic Services testing program in the North Carolina, South Carolina and Virginia included Roundup-Ready and Roundup-Ready/Bollgard™ trials. These field trials were conducted under grower management with emphasis placed on the technology of each variety. In general, the transgenic varieties performed very similar to their recurrent parents as well as other conventional varieties of the same maturity. Comparisons were made under two scenarios. The first comparison is a Roundup-Ready system with all varieties receiving a minimum of one application of Roundup Ultra® at the labeled rate. The second scenario included Roundup-Ready varieties under a conventional system. The third scenario is Roundup-Ready varieties in a side by side comparison with their recurrent parent. These three comparisons were made at different locations.

Introduction

Deltapine Seed's Agronomic Services Department conducts numerous field trials throughout the cotton belt. These Agronomic Services Trials (AST's) aid in variety selection of many growers and consultants. The following is a description of the various types of AST's conducted by Deltapine Seed in 1998:

AST/R - Replicated field trials managed under conventional methods. Varieties are replicated three to four times each.

AST/C - Conventional varieties managed under grower conditions.

AST/B - Bollgard varieties managed for the Bollgard technology. Plot size is usually greater than one-half acre per variety.

AST/RR - Roundup-Ready varieties with management geared toward Roundup technology. All varieties receive a minimum of one application of Roundup Ultra broadcast at labeled rate. Plot size is usually greater than one-half acre per variety.

AST/B/RR - Bollgard/Roundup-Ready (stacked gene) varieties managed for both Bollgard and Roundup technology. Plot size is usually greater than one-half acre per variety.

Materials and Methods

The Deltapine Seed Roundup-Ready varieties grown under the Roundup-Ready system were all managed identically, specific to each location. These varieties were tested at seven locations in North Carolina and South Carolina. The Deltapine Seed Roundup-Ready varieties tested included DP436RR, DP425RR, DP5415RR and DP5690RR.

The Deltapine Seed varieties with both the Bollgard and Roundup-Ready gene were managed for both the Bollgard and Roundup-Ready technologies. These stacked gene varieties were tested at six locations in North Carolina and South Carolina. The stacked gene varieties included DP458B/RR and DP655B/RR.

Both the Roundup-Ready and stacked gene trials consisted of a minimum of 16 rows per variety. Plot acreage ranged from approximately one-half acre to greater than one-half acre per variety.

At eight locations there were side by side comparisons of DP 425R to its recurrent parent of DP51. Another side by side comparison of DP5415R and DP458B/RR to their recurrent parent DP5415 was made at two locations.

Results and Discussions

Deltapine Seed Roundup-Ready varieties were found to yield at or above state averages when Roundup Ultra applications were made following label specifications. In addition, fiber qualities of Deltapine Seed Roundup-Ready varieties were very good (Table 1).

Deltapine Seed varieties with both the Bollgard and Roundup-Ready gene also exhibited excellent fiber qualities (Table 1). Yield of these stacked gene varieties continued to be superior to conventional and Roundup-Ready varieties (Figure 1).

At locations where conventional, Roundup-Ready and stacked gene varieties were all included, the stacked varieties repeatedly out yielded the conventional and Roundup-Ready varieties. Comparisons of fiber qualities at these locations showed no significant difference among the three traits. These locations received no Roundup Ultra applications. However, when compared to locations that received an application(s) of Roundup Ultra, the Roundup Ultra sprayed locations seemed to have slightly better fiber qualities. This observation could be due to environmental differences rather than Roundup Ultra applications.

In side by side comparison trials, the Roundup-Ready varieties performed at no significant difference from their recurrent parents. Varieties with both the Bollgard and Roundup-Ready gene performed significantly better than their recurrent parent (Figure 2).

Summary

The 1998 Deltapine Seed Roundup-Ready and stacked gene varieties showed similar yield patterns to that of their recurrent parents as well as competitive varieties. Although these transgenic varieties were similar in many ways to their recurrent parents, there were also some differences. The key to making these varieties most profitable is good management. Determine what slight management adjustments you need to make for these varieties to perform at the superior level for which they were bred.

Deltapine Seed is dedicated to continued testing of new technologies. We will continue to be on the leading edge enabling us to provide the cotton industry with updated information on new varieties and technologies. Thus, aiding growers in varietal and technological decisions.

LINT YIELD AST/RR & AST/B/RR

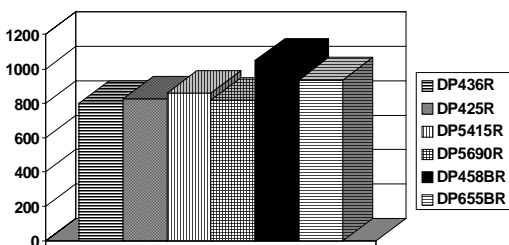


Figure 1. Lint yield comparison of Deltapine Seed Roundup-Ready varieties at 7 locations. All varieties received a minimum of 1 application of Roundup Ultra at the labeled rate.

Table 1. FIBER QUALITIES

VARIETY	STAPLE	COLOR		STRENGTH	UNIFORMITY	#
		GRADE	MIC			
DP436R	35.7	35.3	4.4	27.4	82.0	7
DP425R	34.6	35.3	4.5	27.5	81.6	7
DP5415R	35.3	33.9	4.5	29.6	81.7	7
DP5690R	35.4	32.4	4.4	31.4	80.9	7
DP458BR	35.0	34.3	4.4	28.9	81.5	6
DP655BR	35.2	34.3	4.0	30.6	80.8	6

SIDE BY SIDE YIELD COMPARISONS

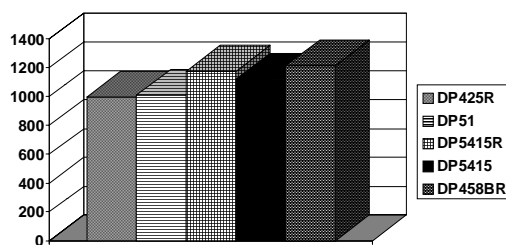


Figure 2. Side by side lint yield comparisons of Roundup-Ready and stacked gene varieties to their recurrent parents.