

PERFORMANCE OF TEXAS ORIGINATING GERMPLASM IN 2003 MIDSOUTH PERFORMANCE EVALUATIONS

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Abstract

Beltwide Cotton Genetics, LLC (Beltwide) is a Memphis-based cottonseed company that currently sells cottonseed which originates exclusively in the south-Texas Rio Grande Valley. In an attempt to provide additional genetic diversity to the Midsouth cotton production area Beltwide submitted some south-Texas originating cultivars into the 2002 and 2003 Midsouth University Official Variety Trials (OVT) evaluations. One of these cultivars, BCG 28R, a Roundup Ready variety, was evaluated in direct comparison with two of the most widely planted Roundup Ready varieties in the Midsouth. In those OVT sites where all three cultivars were evaluated in head-to-head comparisons, BCG 28R produced yields, fiber quality, and gross returns per acre that were comparable to that produced by the two comparison varieties (ST4793RR and DP436R).

Introduction

In 2003 ~95% of the total cottonseed planted in the Midsouth production area was supplied by only two companies: Delta & Pine Land Company and Emergent Genetics, and ~53% of all Midsouth cotton acreage was planted to only three varieties. All current cotton cultivars from Beltwide Cotton Genetics, LLC were developed for and in Texas. Beltwide germplasm provided commercially acceptable results in Texas during pre-commercialization evaluations in years prior to and through 2003, and in commercial farming operations in 2003. Based on performance in the Texas market, and in recognition of the need for additional genetic diversity in the Midsouth region, Beltwide submitted multiple varieties into Midsouth cotton OVT's in an attempt to determine whether Texas originating varieties could compete with the varieties currently being grown in the Midsouth area.

Materials and Methods

USDA Planted Variety Surveys from 2002 through 2003 were reviewed for Missouri, Tennessee, Arkansas, Mississippi, and Louisiana to qualify comparison varieties to evaluate Beltwide 28R.

University OVT evaluations from 2002 and 2003 were reviewed for Missouri, Tennessee, Mississippi, and Louisiana for two-year direct varietal comparisons. Data from Arkansas is NOT included because the OVT data from Arkansas' 2003 test sites was not available from the University of Arkansas in time to be included for presentation at the 2004 Beltwide Cotton Conferences.

Utilizing OVT data only from sites which included all three varieties in direct varietal comparisons, the performance of DP436R, ST4793RR, and BCG-28R was evaluated. No data is included in this comparison unless all three varieties were included at each testing site. Factors considered in the evaluation were total lint yield per acre and the value per pound of the lint. Value per pound was established using a USDA base loan price of \$.52 per pound, with appropriate premiums and/or deductions from the base price as appropriate based on the USDA cotton classing schedule. Performance comparisons were made from OVT's in Missouri, Tennessee, Mississippi, and Louisiana. Arkansas was not included because OVT data from Arkansas was not available prior to completion of the evaluation which was presented on January 8, 2004 at the Beltwide Cotton Conference in San Antonio, TX.

Results

Results from the evaluations are shown in the accompanying graphs. A summary of those results can be written as follows:

In 2002 and 2003 there were 9 LSU OVT locations in Louisiana that qualified for evaluation between ST4793RR, DP436R, and BCG28R. BCG 28R produced an average lint yield of 1,226 lb/ac (Table 1), a length of 1.13 inches (Table 2), and a loan value of \$0.5291 per pound (Table 3). Using the 2003 USDA loan schedule and a base loan price of \$0.52 per pound, BCG 28R achieved a gross value per acre of \$647.42 (Table 4).

In 2002 and 2003, 10 University OVT locations in Missouri qualified to evaluate ST 4793 RR, DP 436 R, and BCG 28R. BCG 28R produced an average lint yield of 927 pounds per acre (Table 5), a length of 1.15 inches (Table 6), and a loan value of \$0.5462 per pound (Table 7). Using the same USDA loan schedule as Louisiana, BCG 28R made a gross value per acre of \$506.24 (Table 8).

In 2002 and 2003 Mississippi had 15 University OVT sites that qualified to evaluate all three varieties. BCG 28R produced an average of 1,114 pounds per acre (Table 9). Not all 15 locations qualified for fiber data evaluation, only 5 of those 15 sites qualified. The fiber data for 2002 was not available at the time this paper was written. Therefore, the 5 locations that qualified for fiber data were used to calculate the average HVI data needed for this paper. BCG 28R, in 5 Mississippi OVT locations, averaged 1.13 inches in length (Table 10) and a loan value of \$0.5243 per pound (Table 11) and an average gross value per acre of \$674.98 (Table 12).

In 2002, BCG 28R was not evaluated in enough Tennessee OVT locations to acquire enough data to compare with ST 4793 RR and DP 436 R. Therefore, only 2003 data was used in this state comparison. In 2003, 4 Tennessee OVT locations qualified to compare all 3 varieties head to head. BCG 28R averaged 1,217 pounds per acre (Table 13), a average length of 1.15 inches (Table 14), and a loan value per pound of \$0.5465 (Table 15). Based on the USDA loan schedule with a base of \$0.52 per pound, BCG 28R averaged \$665.18 gross dollars per acre (Table 16).

Across 28 combined Midsouth OVT locations in head-to-head comparisons in 2002 and 2003, BCG 28R produced an average gross value \$623.46/acre versus \$629.08/acre for ST4793RR and \$593.24/acre for DP436R. The conclusion is that BCG 28R, a Texas-originating cultivar, is performing as well as or better than the two most widely planted 2003 Midsouth area Roundup Ready cultivars.

References

National Cotton Council of America

United States Department of Agriculture; Agricultural Marketing Services and National Agriculture Statistics Service

University of Missouri; 2002-2003 OVT Trials

University of Tennessee; 2003 OVT Trials

Louisiana State University; 2002-2003 OVT Trials

Mississippi State University; 2002-2003 OVT Trials

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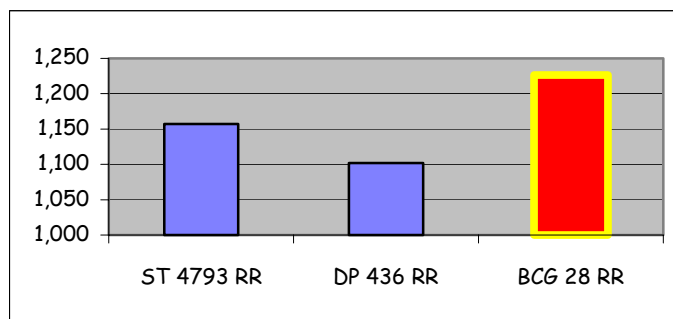


Table 1. Louisiana Yield.

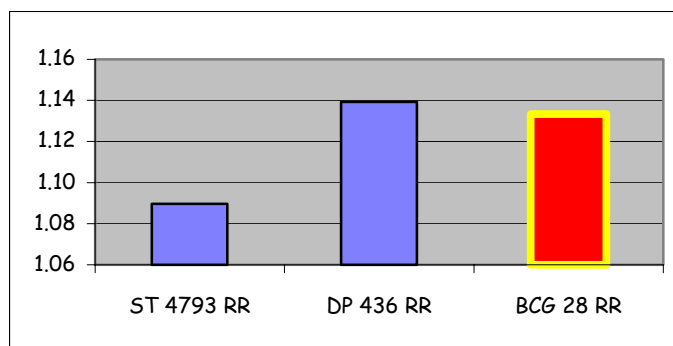


Table 2. Louisiana Length.

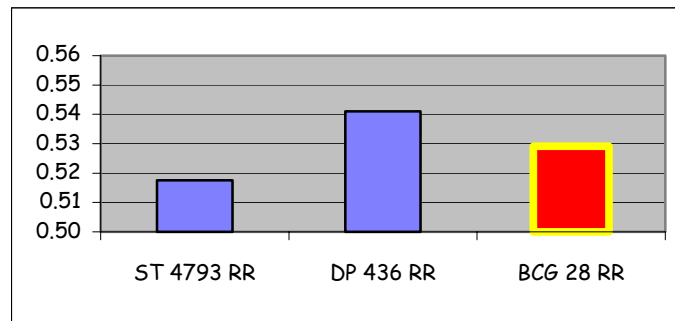


Table 3. Louisiana Loan Value.

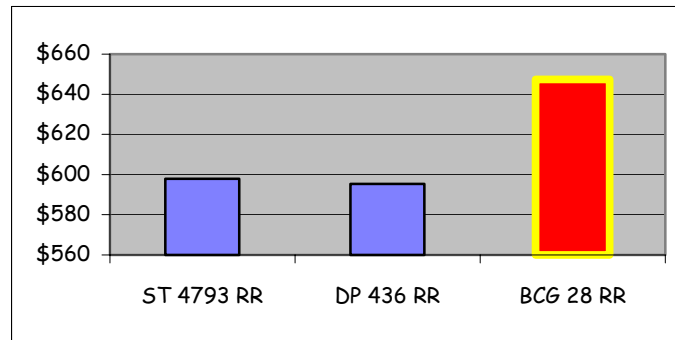


Table 4. Louisiana Gross Value Per Acre.

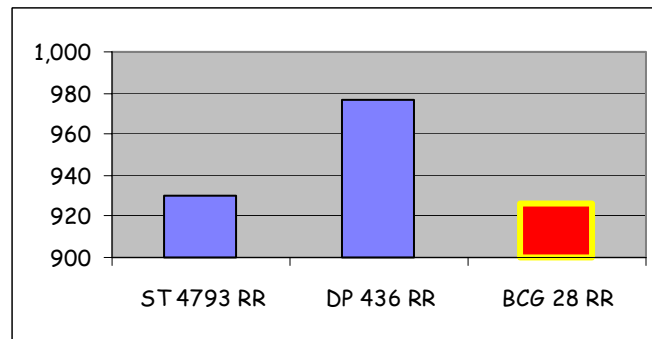


Table 5. Missouri Yield.

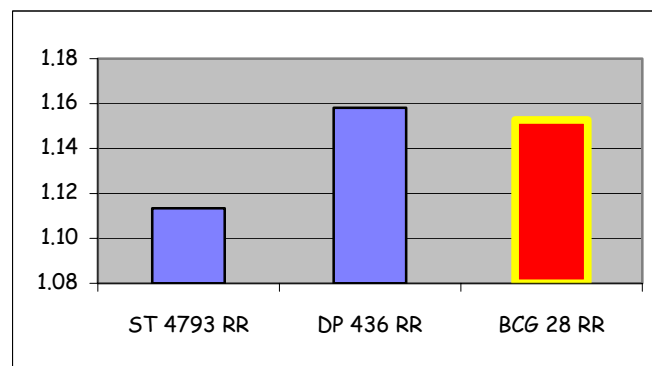


Table 6. Missouri Length.

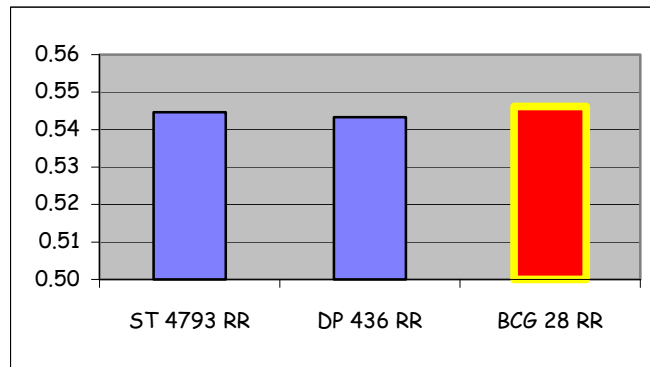


Table 7. Missouri Loan Value.

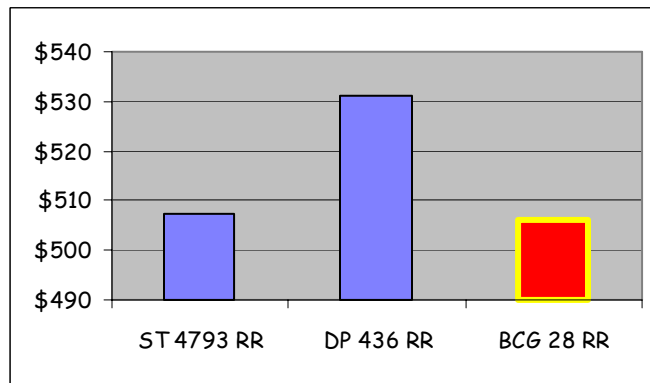


Table 8. Missouri Gross Value Per Acre.

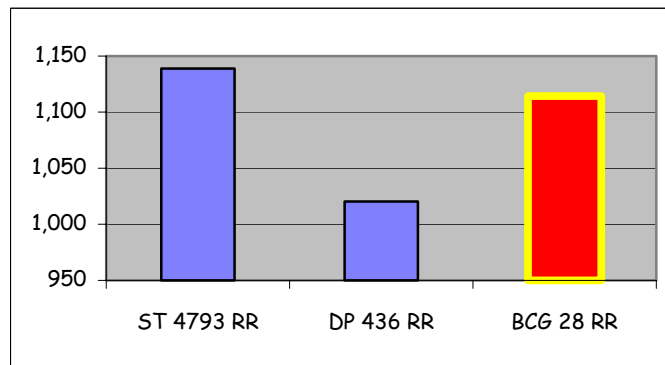


Table 9. Mississippi Yield.

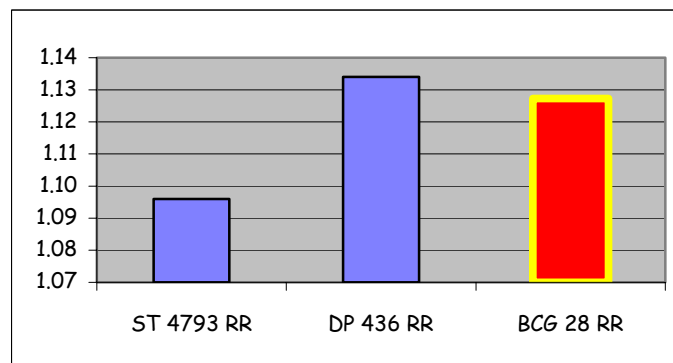


Table 10. Mississippi Length.

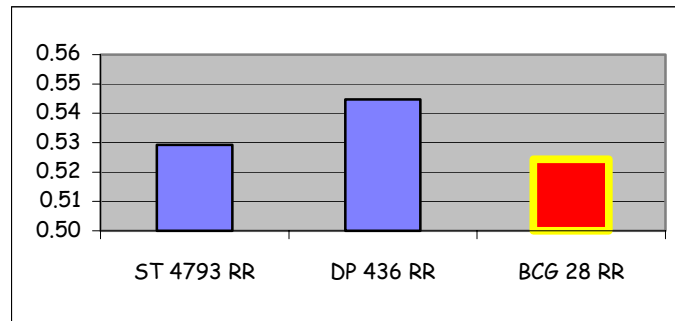


Table 11. Mississippi Loan Value.

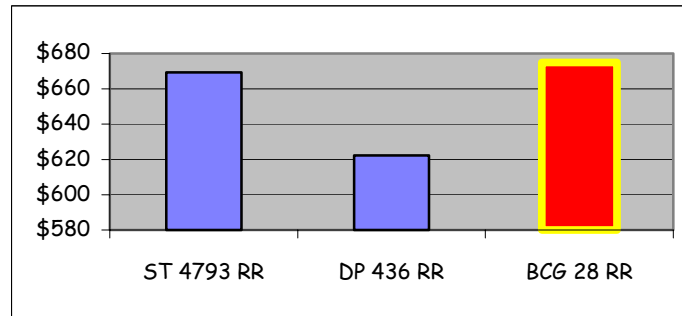


Table 12. Mississippi Gross Value Per Acre.

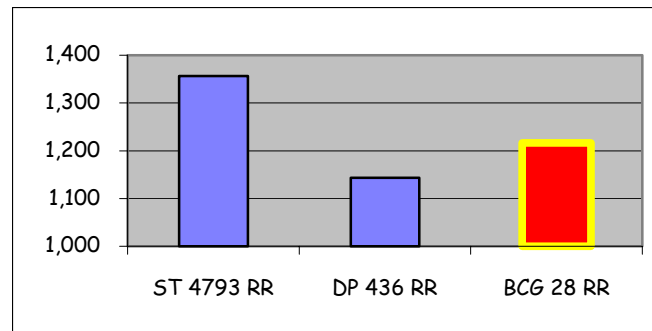


Table 13. Tennessee Yield.

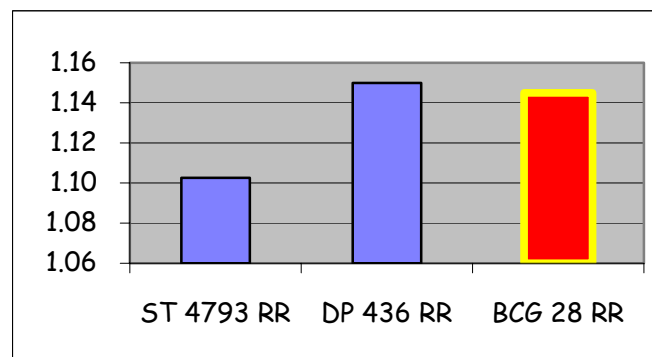


Table 14. Tennessee Length.

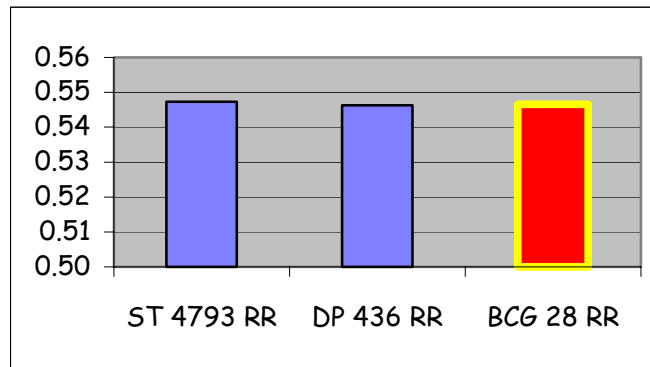


Table 15. Tennessee Loan Value.

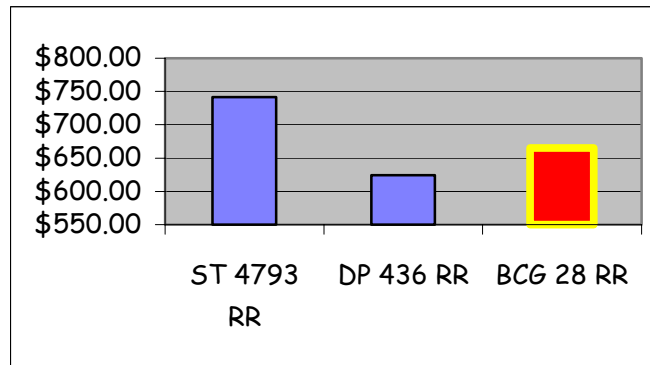


Table 16. Tennessee Gross Value Per Acre.

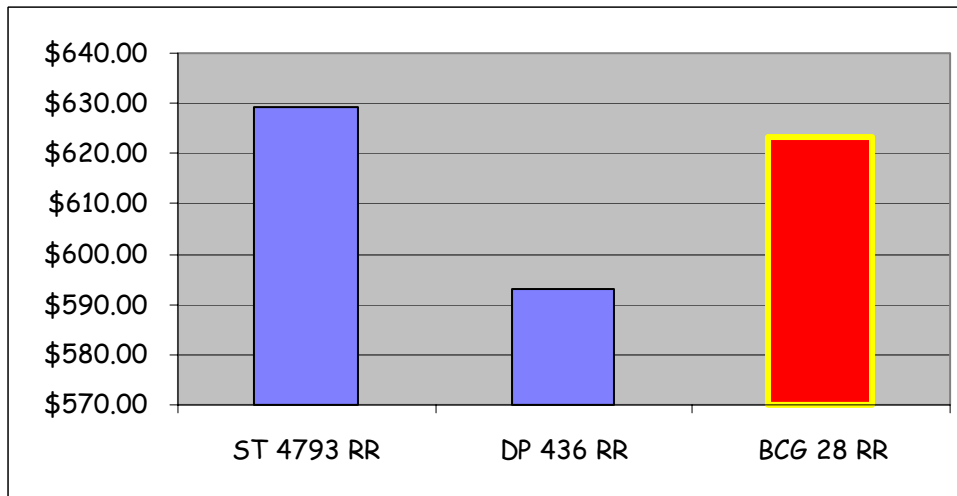


Table 17. Gross Value Per Acre Summary (LA, MO, MS, TN).