DP 0935 B2RF: A NEW MID MATURING CLASS OF 2009 B2RF VARIETY FROM DELTA AND PINE LAND

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Abstract

DP 0935 B2RF is a mid maturity variety with consistent yield performance that will be released for commercial sales in the 2009 growing season. The variety has smooth leaf pubescence and medium plant height. DP 0935 is a nectariless cotton variety making it less attractive to plant bug infestations. The average fiber properties of DP 0935 B2RF are 35 staple, 4.45 micronaire, and 28.1 g/tex fiber strength. The node of the first fruiting branch averages 6.3 nodes. The yield performance and crop value of DP 0935 B2RF is higher than ST 4554 B2RF in a Beltwide comparison, greater than DP 555 BG/RR in the S. Southeast region, and greater than FM 9180 B2RF in W. Texas region.

Introduction

Deltapine brand is releasing for commercial introduction in 2009, a new mid-maturity variety that contains both the Bollgard II and Roundup Ready Flex traits: DP 0935 B2RF. The characteristics describing DP 0935 B2RF are summarized in Table 1. DP 0935 B2RF was developed by Darren Jones and James Mitchell at the Monsanto Cotton Breeding program in Leland, MS. The highlights of DP 0935 B2RF characteristics are improved yield and gin turnout in a nectariless variety compared previous Deltapine brand varieties and competitive check varieties.

Table 1. DP 0935 B2RF Characteristics and Fiber quality

Trait	Description
Maturity	Mid
Leaf Pubescence	Smooth
Plant Height	Med
Seed Size (seed / lb)	4800 – 5200
Verticillium Tolerance	Good
Micronaire	4.45
Staple	~ 35
Strength	28.1 g/tex
Node First Fruiting Branch	6.3

Materials and Methods

The data describing DP 0935 B2RF (along with internal and competitive check varieties) was obtained from the following sources: Monsanto breeder trials (2007, 2008), and Monsanto on-farm trials (2007, 2008). Plant growth, fruiting, and maturity comparisons were made by plant mapping a subset of the Monsanto on-farm trials when approximately 50% of the bolls were open. All available yield, fiber quality and plant mapping data were queried on the dates noted in each data table for these analyses. Analysis of variance was completed using JMP 5.0 statistical software (SAS Institute) and LS Means are presented in the data tables.

Results and Discussion

Plant Mapping Comparisons

The growth and fruiting characteristics of DP 0935 B2RF, as measured by end-of-season plant mapping, are summarized in Table 2. The growth and fruiting variables of DP 0935 B2RF are similar to ST 4554 B2RF, with the exception of plant height, total nodes, and nodes of first fruiting branch (Table 2). DP 0935 B2RF is characterized as a mid maturity variety, with medium plant height due, in part, to a greater number of total and fruiting nodes compared to ST 4554 B2RF, an early-mid maturity.

Table 2. Plant mapping comparison of DP 0935 B2RF and ST 4554 B2RF in on-farm variety trials, 2008.

	DP 0935 B2RF	ST 4554 B2RF
Plant Ht.	37.2	35.9
Total Nodes	20.4	20.1
Fruiting Nodes	10.5	10.3
HNR	1.82	1.78
NFFB	6.3	6.1
n= Beltwide comparisons, 157 locations, 2008 HNR = Height to Node Ratio (inches / node); NFFB = Node of First Fruiting Branch		

Yield, Fiber Quality, and Value Comparisons

DP 0935 B2RF had greater gin turnout, and similar staple, micronaire, and uniformity index compared to ST 4554 B2RF, in 245 locations of testing in 2007 and 2008 (Table 3). DP 0935 had a higher lint yield (increase of 23 to 66 lb/acre) than ST 4554 B2RF resulting in a higher crop value (increase of $10 to $25 / acre). The fiber quality parameters are all similar for DP 0935 B2RF and ST 4554 B2RF, except fiber strength is ~ 1 g/tex less for DP 0935 B2RF. The loan value (cents / lb) for the two varieties is also similar. The improved lint yield of DP 0935 B2RF gives growers a higher yield potential variety choice for several markets that fit the mid maturity of this variety.

Table 3. Lint Yield, Fiber Quality, and Value comparisons of DP 0935 B2RF and ST 4554 B2RF in 2007 and 2008 testing.

Variety	Crop Value ($/acre)	Lint Yield (lb/acre)	% Gin Turnout	Staple (32^{nd}'s inch)	Micronaire	Fiber Strength (g/tex)	Uniformity Index	Loan Value (cents/lb)
2007								
DP0935B2RF	601	1100	37.1	35.2	4.43	27.5	81.5	53.87
ST 4554 B2RF	591	1077	35.2	35.5	4.43	29.0	82.0	54.04
2008								
DP0935B2RF	583	1066	37.4	34.9	4.45	28.1	81.4	54.32
ST 4554 B2RF	558	1006	35.4	35.5	4.55	29.2	81.9	55.15
Notes: Beltwide Data, 2007(71 locations) and 2008 (174 locations) testing Loan Value = $0.52/lb +/- premiums or discounts according to 2007 USDA Loan Chart, assuming 31 color and 3 leaf grade. Data available as of 12.03.08.								

DP 0935 B2RF had 59 lb / acre greater yield lint yield and similar gin turnout to DP 555 BG/RR in 29 comparisons for the 2008 testing located in the S. Southeast region (Table 4). The two varieties had similar fiber properties of staple, micronaire, fiber strength, while the uniformity index was improved for DP 0935 B2RF, resulting in similar loan values (cent /lb).

Table 4. Lint Yield, Fiber Quality, and Value comparisons of DP 0935 B2RF and DP 555BG/RR in 2008 testing in S. Southeast region.

Variety	Crop Value ($/acre)	Lint Yield (lb/acre)	% Gin Turnout	Staple (32nd's inch)	Micronaire	Fiber Strength (g/tex)	Uniformity Index	Loan Value (cents/lb)
DP0935B2RF	604	1161	41.3	33.8	5.00	28.1	80.3	51.68
DP 555BG/RR	570	1102	41.9	33.2	4.92	27.6	79.3	51.27

Notes: 2008 testing 29 locations in S. Southeast region
Loan Value = $0.52/lb +/- premiums or discounts according to 2007 USDA Loan Chart, assuming 31 color and 3 leaf grade. Data available as of 12.03.08.

DP 0935 B2RF was also found to have higher crop value, lint yield, and gin turnout, when compared to FM 9180 B2RF in the W. Texas region (Table 5). The improvements in DP 0935 B2RF over FM 9180 B2RF were crop value (increase of 41 $/acre), lint yield (increase of 113 lb/acre), and gin turnout (2.7 % increase). The fiber qualities for DP 0935 B2RF are lower for staple, micronaire, fiber strength, and uniformity index than FM 9180 B2RF. Loan value (cents/lb) for FM 9180 B2RF was 2 cents / lb higher than DP 0935B2RF, but the crop value for DP 0935 B2RF remained greater, due to the yield advantage.

Table 53. Lint Yield, Fiber Quality, and Value comparisons of DP 0935 B2RF and FM 9180 B2RF 2008 testing in W. Texas region.

Variety	Crop Value ($/acre)	Lint Yield (lb/acre)	% Gin Turnout	Staple (32nd's inch)	Micronaire	Fiber Strength (g/tex)	Uniformity Index	Loan Value (cents/lb)
DP 0935 B2RF	608	1126	36.3	35.1	4.09	27.8	81.2	53.40
FM 9180B2RF	567	1013	33.6	37.4	4.20	30.0	81.9	55.75

Notes: W. Texas On-farm FACT data, 174 locations, 2008 testing
Loan Value = $0.52/lb +/- premiums or discounts according to 2007 USDA Loan Chart, assuming 31 color and 3 leaf grade. Data available as of 12.03.08.

Regional Yield and Crop Value Performance

The regional yield (lb lint/acre) and crop value ($/acre) of DP 0935 B2RF was compared to ST 4554 BRRF to calculate the % difference within each data region listed below (Figure 1). In all regions N. Southeast, S. Southeast, N. Delta, S. Delta, E. Texas, W. Texas, and Arizona/California both the lint yield and crop value were greater than ST 4554 B2RF regional performance.

In the N. Southeast region, the percent yield difference was greatest for DP 0935 B2RF with over a 10% difference when compared to ST4554 B2RF and also a 9% crop value difference. Results were most similar in the S. Delta region with DP 0935 B2RF at 2.5% increase in yield difference and 0.9% in crop value over ST 4544 B2RF.

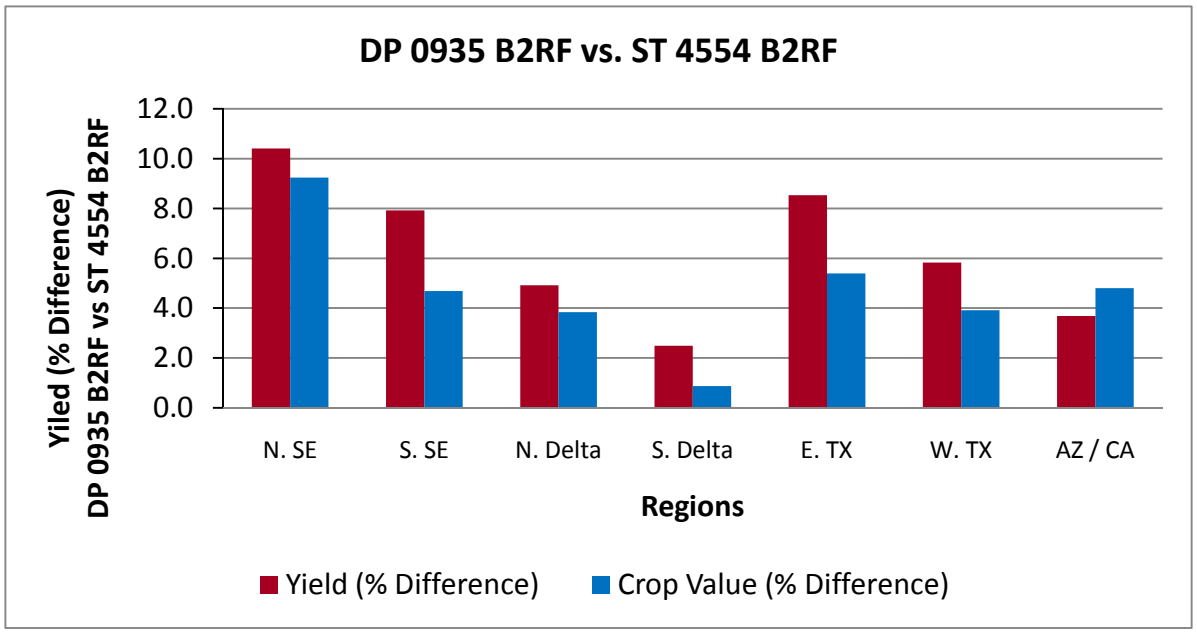

Figure 1. DP 0935 B2RF regional yield and crop value performance expressed as % difference when compared to ST 4554 B2RF in 2008 testing. Regions: N. SE (N. Southeast), S. SE (S. Southeast), N. Delta, S. Delta, E. TX (E. Texas), W. TX (W. Texas), and AZ/CA (Arizona/California).

Summary

DP 0935 B2RF was found to have improved yield performance compared to ST 4554 B2RF (Beltwide 2008), DP 555 BG/RR (S. Southeast), and FM 9180 B2RF (W. Texas). The gin turnout of DP 0935 B2RF was similar to DP 555 BG/RR and improved compared to ST 4554 B2RF and FM 9180 B2F. The loan value of DP 0935 B2RF was slightly greater than DP 555 BG/RR in the S. Southeast region. The crop value of DP 0935 B2RF was greater than all three check varieties. The regional performance of DP 0935 B2RF showed an increase in both yield and crop value when compared to ST 4554 B2RF.