NEW DELTAPINE CLASS OF '10 VARIETIES FOR MID TO FULL SEASON MARKETS: DP 1048 B2RF AND DP 1050 B2RF

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Abstract

DP 1048 B2RF with Genuity™ Bollgard II® Roundup Ready Flex® (B2RF) is a mid-full maturity variety with excellent yield and fiber quality potential that will be released for commercial sales in the 2010 growing season. This variety has a semi- smooth leaf pubescence and a medium-tall plant height. Average fiber properties of DP 1048 B2RF include fiber length of 1.13 to 1.18 inches, 4.7 micronaire, 28.1 g/tex fiber strength and 83.3 uniformity. DP 1048 B2RF has improved average lint yield and many fiber qualities over ST 5458 B2RF, and PHY 485WRF. The regional performance of DP 1048 B2RF showed the best performance in the Southeast and Midsouth regions including very good storm resistance.

DP 1050 B2RF is full-season variety also with excellent yield potential that will be released for commercial sales in the 2010 growing season. This variety has smooth leaf pubescence and a tall plant height. Average fiber properties of DP 1050 B2RF include fiber length of 1.12 to 1.17 inches, 4.7 micronaire, 28.2 g/tex fiber strength and 83.1 uniformity. The node of the first fruiting branch averages 5.7 nodes. DP 1050 B2RF has improved average lint yield and many fiber qualities over ST 5458 B2RF and PHY 485 WRF. The regional performance of DP 1050 B2RF showed the best performance in the Southeast and Midsouth regions including very good storm resistance featuring a tighter boll when compared to other Deltapine varieties. DP 1050 B2RF is earlier than DP 555 BG/RR, but has the growth pattern closest to DP 555 BG/RR in the Deltapine brand class of '10.

Introduction

In 2010, Deltapine brand is releasing for commercial introduction, a new mid to full-season maturity variety: DP 1048 B2RF and a new full-season variety: DP 1050 B2RF which both contain the Genuity™ Bollgard II and Roundup Ready Flex traits. The characteristics describing DP 1048 B2RF and DP 1050 B2RF are summarized in Table 1. The highlights of DP 1048 B2RF are outstanding yield with a maturity which makes it a great fit for the Southern tier of the cotton belt. DP 1050 B2RF also features outstanding yield potential combined with excellent fiber quality when compared to similar full-season varieties of Deltapine brand products and competitive check varieties.

Table 1. DP 1048 B2RF and DP 1050 Characteristics and Fiber Quality

Trait	DP 1048 B2RF	DP 1050 B2RF
Maturity	Mid-Full	Full
Leaf Pubescence	Semi-Smooth	Smooth
Plant Height	Med-Tall (40 inches)	Tall (41.1)
Micronaire	4.7	4.7
Length	1.13 to 1.18	1.12 to 1.17
Strength	28.1 g/tex	28.2 g/tex
Uniformity	83.3	83.1
Number of Nodes	19.6	20.3
Number of Fruiting Nodes	11.1	11.1
Node First Fruiting Branch	5.4	5.7
Node Uppermost Harvestable Boll	15.5	15.8
Rating and measurements from 2009 Field Advancement Coordination Trials		

Materials and Methods

The data describing DP 1048 B2RF and DP 1050 B2RF (along with internal and competitive check varieties) was obtained from the following sources: Monsanto breeder trials (2008), Monsanto on-farm trials (2009) referred to as Field Advancement Coordination Trials (FACT). Plant growth, fruiting, and maturity comparisons were made by plant mapping a subset of the Deltapine brand 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.

Results and Discussion

DP 1048 B2RF Lint Yield Per Acre Regional Comparison

The average lint yields per acre of DP 1048 B2RF, measured at harvest, are summarized in Tables 2. In the table DP 1048 B2RF is compared to several checks which have been averaged according to regional location. Check varieties include DP 0935 B2RF, DP 0949 B2RF, PHY 485 WRF, ST 5458B2RF, FM 9160B2F (West Texas only), FM 1740B2F (West Texas only) and FM 840B2F (South Texas only). The average lint yield of DP 1048 B2RF were higher in Upper and Lower Southeast, Upper and Lower Midsouth, and South TX region when compared to the average of the check varieties. Yield from trials located in the Lower Midsouth were impacted by extended rainfall during September and October with delayed harvest. The combination of the yield performance and maturity of DP 1048 B2RF result in a good fit for this variety in Lower Southeast, Lower Midsouth and South Texas, where DP 555 BG/RR was widely planted.

Table 2. Yield data comparison of DP 1048 B2RF and checks (average yields of several cotton products by region) in Deltapine brand Field Advancement Coordination Trials 2009.

Territory	DP 1048 B2RF	Checks	% Difference
Upper Southeast	1393	1209	15.2
Lower Southeast	1353	1189	13.8
Upper Midsouth	1270	1067	19.0
Lower Midsouth	860	790	8.9
South Texas	884	831	6.4
Central Texas	944	939	0.5
West Texas	1397	1364	2.4
Arizona	1650	1625	1.5
Check = DP 0935 B2RF, DP 0949 B2RF, PHY 485 WRF, ST 5458 B2RF, FM 9160B2F (West Texas only) & FM 1740B2F (West Texas only) and FM 840B2F (South Texas only). Data from 2009 Field Advancement Coordination Trials. Data as of November 30, 2009			

DP 1048 B2RF Yield, Fiber Quality, and Value Comparisons

The performance DP 1048 B2RF compared to ST 5458 B2RF in testing conducted in the Southern Tier of the Cotton Belt (Lower Southeast, Lower Midsouth and Southern Texas regions) indicated increased crop value (increase of 83 $/acre), average lint yield (increase of 134 lb/ acre), Lint % (increase of 3.8%), fiber length (increase of .02) and uniformity index (increase of 1). The improved production of DP 1048 B2RF gives growers a higher yield potential variety option for several markets that fit the mid to full maturing varieties.

In FACT testing in 2009, DP 1048 B2RF also showed improvements over PHY 485WRF in the Southern Tier of the Cotton Belt (Lower Southeast, Lower Midsouth and Southern Texas regions). DP 1048 B2RF had increased crop value (increase of 112 $/acre), average lint yield (increase of 188 lb/ acre), Lint % (increase of 3.4%), and fiber length (increase of 0.03). In comparisons DP 1048 B2RF showed reductions in micronaire, fiber strength and uniformity index (Table 3).

Table 3. Crop Value, Lint Yield, Lint %, Fiber Length, Micronaire, Fiber Strength and Uniformity Index comparisons of DP 1048 B2RF and ST 5458 B2RF in 2009 FACT testing.

Variety	Crop Value ($/acre)	Lint Yield (lb/acre)	Lint %	Fiber Length	Micronaire	Fiber Strength (g/tex)	Uniformity Index
DP 1028 B2RF	660	1194	43.5	1.15	4.7	27.7	83.7
ST 5458B2RF	577	1064	40.1	1.13	4.9	28.7	82.7
% Difference	14.4%	12.2%					
DP 1048 B2RF	655	1184	43.6	1.15	4.7	27.7	83.7
PHY 485 WRF	543	996	40.2	1.12	4.9	29.9	84.2
% Difference	20.6%	18.9%					
Notes: Field Advancement Coordination Trial located in the Lower Southeast, Lower Midsouth, and Southern Texas Regions. Data as of December 15, 2009 (n=41 locations) Crop Value = Lint Yield x Loan Value (assume color grade 31 and leaf grade 3)							

DP 1048 B2RF was also compared to DP 555 BG/RR in the Lower Southeast, Lower Midsouth, and S. Texas regions, where DP 555 BG/RR has become an industry standard. In the FACT trials, DP 1048 B2RF produced 144 lb/acre greater yield and $96 / acre greater crop value. Two fiber traits of DP 1048 B2RF that are improved over DP 555 BG/RR are fiber length (+0.05) and uniformity index (+1.5%) (Table 4).

Table 4. Crop Value, Lint Yield, Lint %, Fiber Length, Micronaire, Fiber Strength, and Uniformity Index comparisons of DP 1048 B2RF and DP 555 BG/RR in 2009 FACT testing.

Variety	Crop Value ($/acre)	Lint Yield (lb/acre)	Lint %	Fiber Length	Micronaire	Fiber Strength (g/tex)	Uniformity Index
DP 1048 B2RF	754	1344	41.8	1.16	4.6	27.8	83.9
DP 555 BG/RR	658	1200	41.6	1.11	4.7	28.1	82.4
% Difference	14.7%	12.0					
Notes: 2009 Field Advancement Coordination Trials located in the Lower Southeast, Lower Midsouth and Southern Texas Regions. Data as of December 15, 2009 (n=19 locations) Crop Value = Lint Yield x Loan Value (assume color grade 31 and leaf grade 3)							

DP 1048 B2RF Stability Graph

Stability analysis was performed by comparing the average lint yield (lb/acre) of DP 1048 B2RF and ST 5458B2RF in the 2009 FACT locations to the average lint yield of each location. The data for each variety was fit with a linear regression and the intercept, slope, and R^2 were compared. The stability analysis showed DP1048 B2RF produced an higher yield potential meaning a greater stability of product yield (Figure 1). The comparison of the linear regression shows that DP 10 48 B2RF had a higher intercept (+59 lb /acre), and higher slope (1.04 vs. 0.99) and higher R^2 (0.97 vs. 0.92).

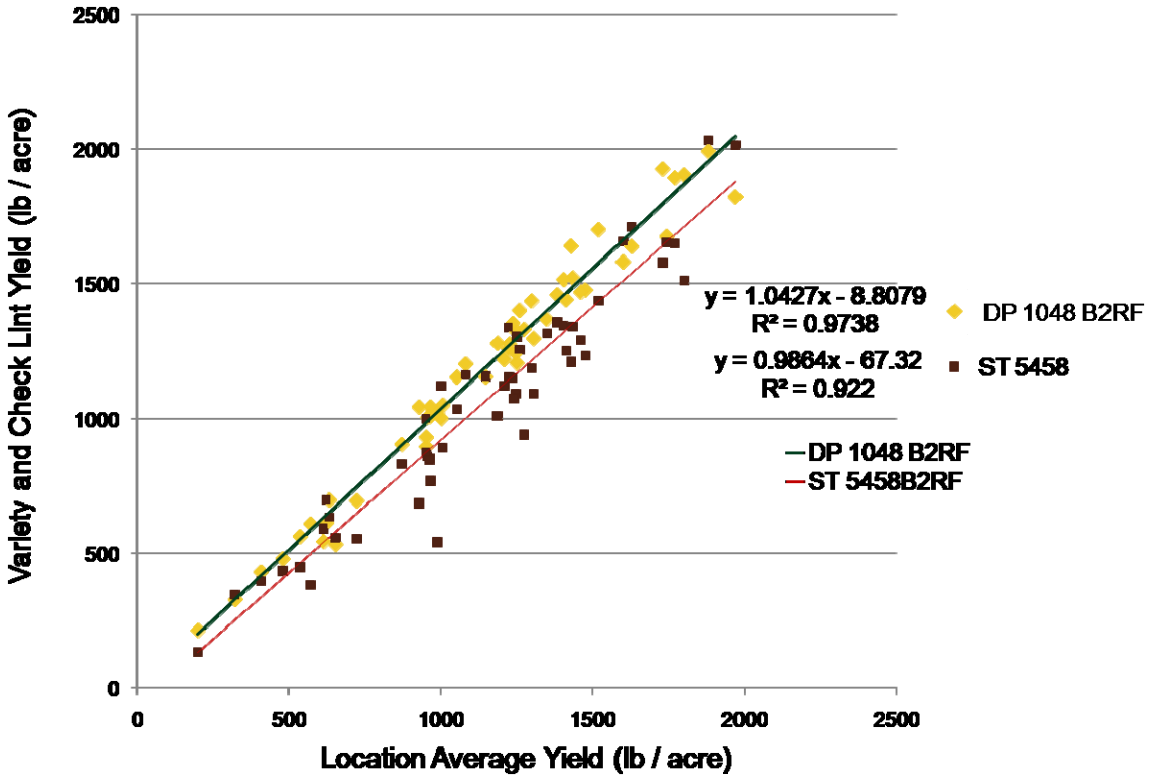

Figure 1. DP 1048 B2RF versus ST 5458 B2RF comparing variety lint yield (lb/acre) by location average lint yield from several locations.

DP 1050 B2RF Lint Yield Per Acre Regional Comparison

The average lint yields per acre of DP 1050 B2RF, measured at harvest, are summarized in Tables 5. DP 1050 B2RF is compared to several checks which have been averaged according to regional location. Check varieties include DP 0935 B2RF, DP 0949 B2RF, PHY 485 WRF, ST 5458B2RF, FM 9160B2F (West Texas only), FM 1740B2F (West Texas only) and FM 840B2F (South Texas only). The average lint yield of DP 1050 B2RF had higher yields in the Upper Southeast, Lower Southeast, Upper Midsouth, Lower Midsouth regions, and South Texas when compared to the average of the check varieties. In both the Central Texas and West Texas regions average lint yield of DP 1050 B2RF and the checks was less.

Table 5. Yield data comparison of DP 1050 B2RF and checks (average yields of several cotton products by region) in Deltapine brand Field Advancement Coordination Trials 2009.

Territory	DP 1050 B2RF	Checks	% Difference
Upper Southeast	1366	1256	8.8
Lower Southeast	1324	1170	13.2
Upper Midsouth	1152	1012	13.8
Lower Midsouth	856	790	8.4
South Texas	881	831	6
Central Texas	850	945	-10.4
West Texas	1484	1554	-4.5
Arizona	1646	1625	1.3
Check = DP 0935 B2RF, DP 0949 B2RF, PHY 485 WRF, ST 5458 B2RF, FM 9160 B2F (West Texas only) & FM 1740 B2F (West Texas only) and FM 840 B2F (South Texas only). Data from 2009 Field Advancement Coordination Trials. Data as of November 30, 2009			

DP 1050 B2RF Yield, Fiber Quality, and Value Comparisons

DP 1050 B2RF was compared to ST 5458B2RF in the Southern Tier of the Cotton Belt (Lower Southeast, Lower Midsouth and Southern Texas regions), where DP 1048 B2RF had advantages in crop value (increase of 83 $/acre), average lint yield (increase of 129 lb/ acre), and Lint % (increase of 3.8%). DP 1050 B2RF had a slight reduction in micronaire and fiber strength when compared to ST 5458B2RF (Table 6). The increased yield performance of DP 1050 B2RF gives growers a higher yield potential option for several markets that fit mid to full maturing varieties.

In FACT testing in 2009 DP 1050 B2RF also showed improvements over PHY 485 WRF in the Southern Tier of the Cotton Belt (Lower Southeast, Lower Midsouth and Southern Texas region). DP 1050 B2RF showed improvements in crop value (increase of 108 $/acre), average lint yield (increase of 180 lb/ acre), Lint % (increase of 4.2%), and fiber length (increase of 0.02). DP 1050 B2RF showed a slight reduction in micronaire, fiber strength and uniformity index compared to PHY 485 WRF (Table 6).

Table 6. Crop Value, Lint Yield, Lint %, Fiber Length, Micronaire, Fiber Strength, and Uniformity Index comparisons of DP 1050 B2RF and ST 5458 B2RF in 2009 Field Advancement Coordination Trial testing.

Variety	Crop Value ($/acre)	Lint Yield (lb/acre)	Lint %	Fiber Length	Micronaire	Fiber Strength (g/tex)	Uniformity Index
DP 1050 B2RF	620	1120	43.9	1.14	4.7	28	84.5
ST 5458B2RF	537	991	40.1	1.13	4.9	28.6	83.7
% Difference	15.4%	13.0%					
DP 1050 B2RF	622	1125	43.9	1.14	4.7	27.8	83.6
PHY 485 WRF	514	945	39.7	1.12	4.9	30.1	84.2
% Difference	15.4%	13.0%					
Notes: Field Advancement Coordination Trial located in Lower Southeast, Lower Midsouth and South Texas Regions. Data as of December 15, 2009 (n= 40 locations) Crop Value = Lint Yield X Loan Value (assume color grade 31 and leaf grade 3)							

DP 1050 B2RF was also compared to DP 555 BG/RR in the Lower Southeast, Lower Midsouth, and S. Texas regions, where DP 555 BG/RR has become an industry standard. In the FACT trials, DP 1050 B2RF produced 169 lb/acre greater yield and $112 / acre greater crop value. Two fiber traits of DP 1048 B2RF that are improved over DP 555 BG/RR are fiber length (+0.04) and uniformity index (+1.3%) (Table 7).

Table 7. Crop Value, Lint Yield, Lint %, Fiber Length, Micronaire, Fiber Strength, and Uniformity Index comparisons of DP 1050 B2RF and PHY 485 WRF in 2009 Field Advancement Coordination Trial testing.

Variety	Crop Value ($/acre)	Lint Yield (lb/acre)	Lint %	Fiber Length	Micronaire	Fiber Strength (g/tex)	Uniformity Index
DP 1050 B2RF	771	1378	43.1	1.15	4.7	28.1	83.5
DP 555 BG/RR	659	1209	42.0	1.11	4.7	28.1	82.2
% Difference	16.9%	14.0%					
Notes: 2009 Field Advancement Coordination Trials located in Lower Southeast, Lower Midsouth and Southern Texas Regions. Data as of December 15, 2009 Crop Value = Lint Yield x Loan Value (assume color grade 31 and leaf grade 3)							

DP 1050 B2RF Stability Graph

A stability analysis was performed by the linear regression method of comparing the lint yield (lb/acre) of DP 1050 B2RF and ST 5458 B2RF at the FACT locations to the average lint yield of the location. This analysis showed DP1050 B2RF had 74 lb / acre higher intercept, a slightly higher slope (1.01 vs 0.98), and higher R^2 (0.96 vs. 0.92). These factors indicate that DP 1048 B2RF had less scatter in its yield data, and better yield performance across the range of yields in the locations tested in 2009. (Figure 2).

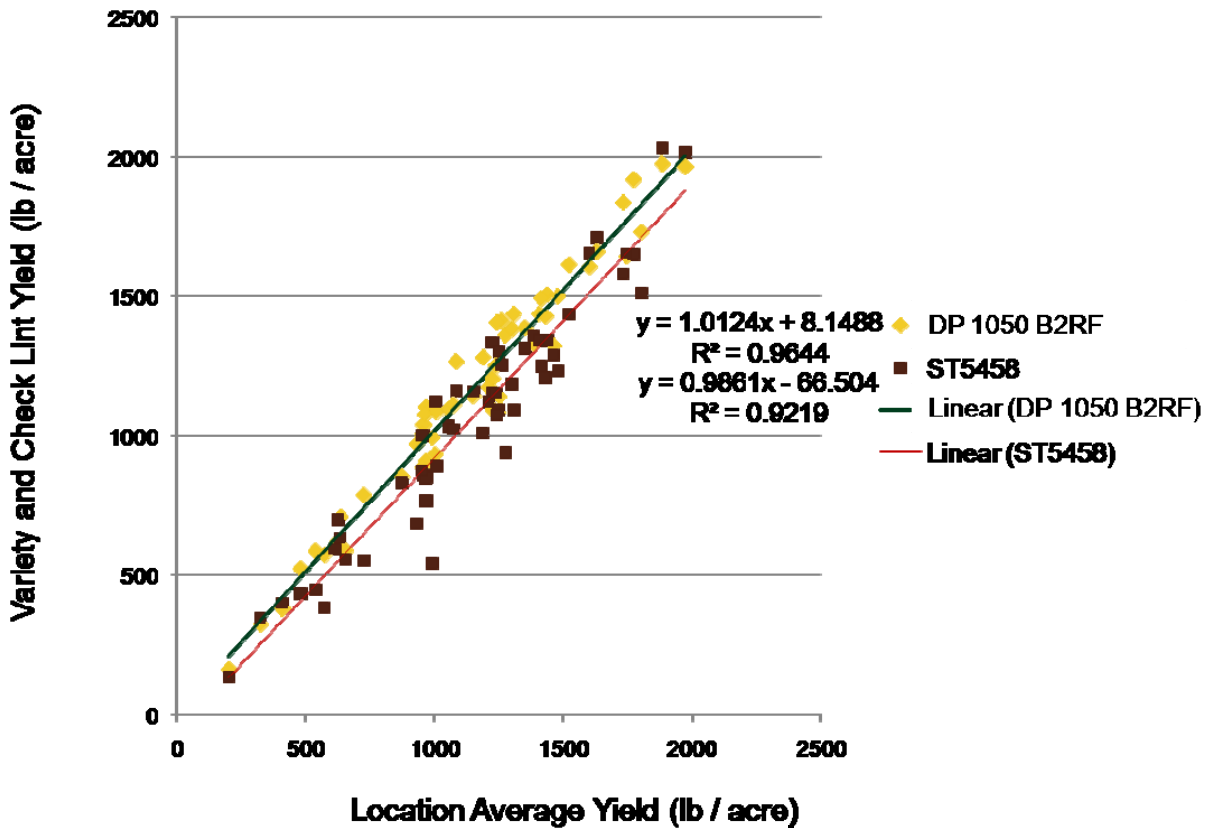

Figure 2. DP 1050 B2RF versus ST 5458 B2RF comparing variety lint yield (lb/acre) by location average lint yield from Field Advancement Coordination Trial locations.

Summary

In a regional yield comparison DP 1048 B2RF was found to have greater yield performance than an average of several check varieties (DP 0935 B2RF, DP 0949 B2RF, PHY 485 WRF, ST 5458B2RF, FM 9160 B2F (West Texas only), FM 1740 B2F (West Texas only) and FM 840 B2F (South Texas only) in Upper Southeast, Lower Southeast, Upper Midsouth, Lower Midsouth, and South Texas regions. In the 2009 trials, DP 1048 B2RF performed greatest in the Southeast and Midsouth regions. DP 1048 B2RF was found to have greater crop value ($/acre) and lint yield (lbs/acre) performance compared to DP 555 BG/RR, ST5458B2RF and PHY 485 WRF from comparisons made in 2009 FACT Trials located in the Southern Tier Cotton Belt regions.

DP 1050 B2RF was found to have greater yield performance than an average of several check varieties including DP 0935 B2RF, DP 0949 B2RF, PHY 485 WRF, and ST 5458B2RF, and FM840B2F (testing in South Texas only) in the Southeast, Midsouth and South Texas regions. DP 1050 B2RF was found to have greater crop value ($/acre), average lint yield (lbs/acre), lint % and fiber length to DP 555 BG/RR, ST 5458B2RF and PHY 485 WRF from comparisons made in 2009 FACT Trials located in the Southern Tier Cotton Belt regions (Lower Southeast, Lower Midsouth and South Texas).

The 2010 introduction of mid to full maturity variety DP 1048 B2RF and full-season variety DP 1050 B2RF will provide cotton producers new options for Deltapine products with advanced trait technology combined with exceptional yield potential and fiber quality.

Notes / Disclaimers

Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible.