

**DP 1137 B2RF: A NEW MID MATURING CLASS OF 2011 B2RF VARIETY**

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**Abstract**

DP 1137 B2RF with Genuity® Bollgard II® with Roundup Ready® Flex (B2RF) cotton is a mid-maturing variety with excellent yield potential that will be released for commercial sales in the 2011 growing season. This variety has smooth leaf pubescence with a tall plant type. Average fiber properties of DP 1137 B2RF include fiber length of 1.12 to 1.13 inches, 4.6 to 4.7 micronaire, 29 to 30 g/tex fiber strength and 82 to 83% length uniformity. The node of the first fruiting branch averages 5.2 to 6.5. DP 1137 B2RF was developed from the Monsanto cotton breeding program using elite genetics rather than conversion of previous high yielders. As a result of these breeding techniques high yields have been reported for Deltapine varieties in the Class of 11.

The yield performance of DP 1137 B2RF reported higher yield potential when compared to averages taken from competitor stacks (2-gene insect protection + herbicide tolerance) which include mid-maturing Stoneville®, FiberMax®, and PhytoGen® varieties tested containing Genuity® Bollgard II® with Roundup Ready® Flex, LibertyLink® with Bollgard II® , and Widestrike® with Roundup Ready® Flex traits. DP 1137 B2RF has improved lint yield and many fiber qualities over many competitor stacked varieties. The regional performance of DP 1137 B2RF showed the best performance in the Upper Southeast and Upper Midsouth hill regions.

**Introduction**

The Deltapine brand is releasing for commercial introduction in 2011, a new mid maturity variety that contains both the Genuity® Bollgard II® with Roundup Ready® Flex traits: DP 1137 B2RF. The characteristics describing DP 1137 B2RF are summarized in Table 1. The highlights of DP 1137 B2RF are improved % lint, strength, length, uniformity and outstanding yield potential compared to previous Deltapine brand products and competitor stack varieties.

Table 1. DP 1137 B2RF Characteristics and Fiber quality

<b>Trait</b>	<b>Description</b>
Maturity	Mid
Leaf Pubescence	Smooth
Plant Height	Tall
Micronaire	4.6 - 4.7
Length (in.)	1.12 - 1.13
Strength (g/tex)	29 - 30
Length Uniformity (%)	82 - 83
Node First Fruiting Branch	5.2 – 6.5
Fruiting Branches	7.6 - 10.7

**Materials and Methods**

The data describing DP 1137 B2RF (along with internal and competitive check varieties) was obtained from the following sources: Monsanto breeder trials (2008), Monsanto on-farm strip trials (2009 and 2010) referred to as Field Advancement Coordination Trials (FACT), on-farm module-sized trials referred to as New Product Evaluation (NPE) in 2009 and 2010, and university variety trials in 2010. 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. Analysis of variance was completed using JMP 5.0 statistical software (SAS Institute).

## Results and Discussion

### Regional Comparison of Characteristic Ratings and Evaluations

Cotton characteristics ratings and evaluations of DP 1137 B2RF are summarized in Tables 2. In the table, DP 1137 B2RF is compared to DP 0912 B2RF which has been averaged by region. DP 1137 B2RF exhibited equal vigor rating, and taller plant height when compared to DP 0912 B2RF in the Northern Tier, Southern Tier and Texas regions. DP 1137 B2RF had significantly higher average node of first fruiting branch when compared to DP 0912 B2RF in the Northern Tier and Southern Tier regions.

Table 2. Characteristic ratings and evaluation comparisons of DP 1137 B2RF and DP 0912 B2RF (average ratings and evaluations of cotton products by region) in Deltapine brand Plant Map and In-Season Summary Trials 2010.

Rating / Eval	Northern Tier			Southern Tier			Texas		
	<b>DP 1137 B2RF</b>	<b>DP 0912 B2RF</b>		<b>DP 1137 B2RF</b>	<b>DP 0912 B2RF</b>		<b>DP 1137 B2RF</b>	<b>DP 0912 B2RF</b>	
Vigor Rating	3.4	3.4	ns	3.6	3.5	ns	3.9	3.5	ns
Plant Ht. (inches)	39.9	37.3	*	46.0	42.4	*	34.9	32.0	*
NFFB	5.25	5.6	*	5.5	5.7	*	6.5	6.7	ns
Total Nodes	18.7	19.1	ns	19.1	19.7	ns	17.4	17.9	ns
Fruiting Nodes	9.8	9.8	ns	10.7	10.9	ns	7.6	7.8	ns
Relative Maturity (HU)	+29		*	+31		*	+5		ns
Vigor rating 1 = excellent; 9 = poor NFFB = Node of First fruiting branch “*” Statistically significant difference from the check variety (p>F = 0.05) ns = non significant difference vs. check variety									

### Yield, Loan Value, and Crop Value Comparisons

The improvements in DP 1137 B2RF over competitor stacks in testing in the Upper Southeast region were lint yield (increase of 153 lbs/acre), loan value (increase of .0018 \$/lb) and crop value (86.61 \$/acre) (Table 3). The improved production of DP 1137 B2RF gives growers a high yield potential option for several markets that fit the mid maturing varieties.

Table 3. Lint Yield (lb/acre), Loan Value (\$/lb), and Crop Value (\$/acre) comparisons of DP 1137 B2RF and Competitor Stacks in 2010 Field testing in the Upper Southeast region.

Variety	Lint Yield (lb/acre)	Loan Value (\$/lb)	Crop Value (\$/acre)
DP 1137 B2RF	1352	0.5517	745.96
Competitor Stacks	1199	0.5499	659.35
% Difference	12.8%	0.3%	13.1%
% Wins – DP 1137 B2RF	84.6%		
Number of comparisons	117		
Notes: Loan value is based on 2010 USDA - CCC Loan chart, assuming 31 color grade and 3 leaf grade. Crop Value is lint yield x loan value. Competitor Stacks includes all ST, FM, and PHY varieties containing Genuity® Bollgard II® with Roundup Ready® Flex, Widestrike with Genuity® Roundup Ready® Flex, and Liberty Link® with Genuity® Bollgard II® traits. Data available in Mirage database 12.17.10			

In field testing in 2009 and 2010, DP 1137 B2RF also showed improvements over PhytoGen® Widestrike® Genuity® Roundup Ready® Flex (WRF) cotton products in the Upper Southeast region. DP 1137 B2RF showed improvements in lint yield (increase of 95 lb/acre) and crop value (increase of 48 \$/acre) (Table 4). DP 1137 B2RF won in 65.4% of the trials when compared to Phytogen® Widestrike® with Roundup Ready® Flex cotton products.

Table 4. Lint Yield (lb/acre), Loan Value (\$/lb), and Crop Value (\$/acre) comparisons of DP 1137 B2RF and \*Phytogen® Widestrike® with Genuity® Roundup Ready® Flex cotton products in 2009- 2010 field testing in the Upper Southeast region.

Variety	Lint Yield (lb/acre)	Loan Value (\$/lb)	Crop Value (\$/acre)
DP 1137 B2RF	1437	0.5542	796.35
Phytogen cotton products*	1342	0.5578	748.35
% Difference (DP vs. Comp.)	7.1%	-0.6%	6.4%
% Wins – DP 1137 B2RF	65.4%		
Number of Comparisons	129		
Notes: Loan value is based on 2010 USDA - CCC Loan chart, assuming 31 color grade and 3 leaf grade. Crop Value is lint yield x loan value. Data available in Mirage database 12.17.10			

In field testing in 2009 and 2010, DP 1137 B2RF showed improvements over \*Stoneville® Genuity® Bollgard I®I with Roundup Ready® Flex cotton products in the Upper Southeast region. DP 1137 B2RF showed improvements in lint yield (increase of 84 lb/acre), loan value (increase of .0026 \$/lb), and crop value (increase of 50.54 \$/acre) (Table 5).

Table 5. Lint Yield (lb/acre), Loan Value (\$/lb), and Crop Value (\$/acre) comparisons of DP 1137 B2RF and Stoneville® cotton products in 2009 - 2010 field testing in the Upper Southeast region.

Variety	Lint Yield (lb/acre)	Loan Value (\$/lb)	Crop Value (\$/acre)
DP 1137 B2RF	1442	0.5554	800.95
Stoneville cotton products*	1358	0.5528	750.41
% Difference (DP vs. Comp.)	6.2%	0.5%	6.7%
% Wins – DP 1137 B2RF	71.6%		
Number of Comparisons	108		
Notes: Loan value is based on 2010 USDA - CCC Loan chart, assuming 31 color grade and 3 leaf grade. Crop Value is lint yield x loan value. Data available in Mirage database 12.17.10			

In field testing in 2010, DP 1137 B2RF also showed improvements over PHY 375 WRF in the Upper Southeast region. DP 1137 B2RF showed improvements in lint yield (increase of 85 lb/acre), loan value (increase of .0009 \$/lb), and crop value (increase of 47.41 \$/acre) (Table 6).

Table 6. Lint Yield (lb/acre), Loan Value (\$/lb), and Crop Value (\$/acre) comparisons of DP 1137 B2RF and PHY 375 WRF in 2010 Field Advancement Coordination Trial testing in the Upper Southeast region.

Variety	Lint Yield (lb/acre)	Loan Value (\$/lb)	Crop Value (\$/acre)
DP 1137 B2RF	1347	0.5475	737.44
PHY 375 WRF	1262	0.5466	690.03
% Difference (DP vs. Comp.)	6.7%	0.2%	6.9%
% Wins – DP 1137 B2RF	81.3%		
Number of Comparisons	16		
Notes: Loan value is based on 2010 USDA - CCC Loan chart, assuming 31 color grade and 3 leaf grade. Crop Value is lint yield x loan value. Data available in Mirage database 12.17.10			

### Summary

DP 1137 B2RF was found to have outstanding yield performance for dryland situations in the Upper Southeast and the Upper Midsouth hill regions. DP1137 B2RF exhibited vigorous seedling emergence and plant growth which can be beneficial in stressful growing conditions where stalk size is a limiting factor. The excellent seedling vigor of this mid-maturity cotton product will favor planting during the first half of the planting window in the Upper Southeast and Northern Alabama regions. In product testing, DP 1137 B2RF showed higher yield potential than an average of several competitor stacks including all Stoneville®, FiberMax®, and Phytogen® varieties containing Genuity®

Bollgard II® with Roundup Ready® Flex, Widestrike® with Genuity® Roundup Ready® Flex, and LibertyLink® with Genuity® Bollgard II® traits in the Upper Southeast region. DP 1137 B2RF offers a tall plant type that under vigorous growing conditions, moderate to strong application rates of PGR (mepiquat) should be applied early at 8 to 10 nodes and internode distance and fruit retention should be closely monitored for additional PGR applications.

### Acknowledgements

The author wishes to acknowledge the Monsanto cotton breeding group and the Monsanto Technology Development group for their critical roles in developing and testing new Deltapine varieties.

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