DELTAPINE® CLASS OF '16 BOLLGARD II® XTENDFLEX® COTTON VARIETIES FOR TEXAS

Eric C. Best
Monsanto Company
Lubbock, TX
David W. Albers
Monsanto Company
Saint Louis, MO
Keylon Gholston
Monsanto Company
Baldwyn, MS

Abstract

For the Deltapine brand Class of '16, DP 1612 B2XF is a Bollgard II® XtendFlex® cotton variety designed to help maximize weed control through effective and sustainable weed management options. DP 1612 B2XF is an early maturing cotton variety with high yield potential that has excellent fiber length and strength. Fiber quality ratings include fiber length of 1.14 inches, 4.4 micronaire, 31.2 g/tex fiber strength, and 82.7% uniformity index. DP 1612 B2XF has light hairy leaf pubescence that is a good fit for short-season environments for Texas regions.

Introduction

Deltapine® brand has a new early maturing cotton variety, DP 1612 B2XF, with Bollgard II® XtendFlex® cotton technology. The characteristics describing DP 1612 B2XF are summarized in Table 1. Highlights of DP 1612 B2XF are excellent fiber length, strength, and ease of management.

Table 1. DP 1612 B2XF Characteristics and Fiber Quality.

Characteristic	DP 1612 B2XF
Maturity	Early
Leaf Pubescence	Light Hairy
Micronaire	4.4
Length	1.14 inches
Strength	31.2 g/tex
Uniformity	82.7%
Bacterial Blight	Susceptible

Materials and Methods

The data describing DP 1612 B2XF (along with internal and competitive check varieties) was obtained from the following sources: Monsanto breeder trials, Monsanto on-farm trials, and University trials. 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.

Results and Discussion

DP 1612 B2XF Plant Mapping Comparisons

The growth and fruiting characteristics of DP 1612 B2XF, as measured by end-of-season plant mapping, are summarized in Table 2. The growth and fruiting variables of DP 1612 B2XF are similar to DP 1522 B2XF in West Texas data trials. DP 1612 B2XF requires 24 less heat units to achieve 100% open boll when compared to the similar early maturing cotton product DP 1522 B2XF. DP 1612 B2XF is characterized as an early maturing variety, with slightly shorter plant height than DP 1522 B2XF.

Table 2. Plant mapping comparison of DP 1612 B2XF and DP 1522 B2XF in Monsanto Trials (2015) in in-season West Texas data trials.

	DP 1612 B2XF	DP 1522 B2XF
Vigor Rating	3.0	3.5
Plant Height (inches)	27.3	29.2
Total Nodes	16.3	17.0
Number of Fruiting Nodes	8.6	9.1
% Est Open	63.0	60.6
Node of First Fruiting Branch	5.9	6.1
HU Difference to 100% open	-24	0
Fall Out Rating	3.7	3.7
String Out Rating	4.7	3.7

DP 1612 B2XF Yield, Fiber Quality, and Value Comparisons

DP 1612 B2XF was compared to DP 1518 B2RF in testing conducted across the Beltwide region. DP 1612 B2XF showed improvements over DP 1518 B2RF in strength (increase of 1.98 g/tex), and uniformity index (increase of 0.5), and had similar fiber length (Table 3).

Table 3. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1612 B2XF and DP 1518 B2RF across the Beltwide region, 2014 and 2015.

Variety	Lint Yield (lb/acre)	Lint %	Fiber Length	Micronaire	Fiber Strength (g/tex)	Uniformity Index
DP 1612 B2XF	1,227	37.47	1.15	4.36	31.36	82.89
DP 1518 B2RF	1,241	38.33	1.15	4.19	29.38	82.39
Significance		**		**	**	**
Observations	171	176	151	151	151	151
Years	2	2	2	2	2	2
% Wins	46	27	58	20	91	72
Significance levels denoted by + = 0.1; * = 0.05; ** = 0.01 alpha error levels. Data Source: All Monsanto (Breeding, Tech Development) and University trials available for 2015 across the Beltwide region.						

DP 1612 B2XF was compared to DP 1518 B2RF in testing conducted in the Northern Tier region. DP 1612 B2XF showed improvements over DP 1518 B2RF in strength (increase of 1.79 g/tex), and uniformity index (increase of 0.91), and had similar lint yield and fiber length (Table 4).

Table 4. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1612 B2XF and DP 1518 B2RF in the Northern Tier region, 2015.

Variety	Lint Yield (lb/acre)	Lint %	Fiber Length	Micronaire	Fiber Strength (g/tex)	Uniformity Index
DP 1612 B2XF	1,158	37.35	1.18	4.48	30.34	83.75
DP 1518 B2RF	1,156	38.44	1.18	4.22	28.55	82.84
Significance		**		**	**	**
Observations	55	54	32	32	32	32
Years	1	1	1	1	1	1
% Wins	47	14	48	9	91	84
Significance levels denoted by + = 0.1; * = 0.05; ** = 0.01 alpha error levels. Data Source: All Monsanto (Breeding, Tech Development) and University trials available for 2015 in the Northern Tier region.						

DP 1612 B2XF was compared to ST 4946GLB2 in testing conducted in the Northern Tier region. DP 1612 B2XF showed improvements over ST 4946GLB2 in micronaire (0.17 lower) and similar lint yield, lint percent, and fiber strength (Table 5).

Table 5. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1612 B2XF and ST 4946GLB2 in the Northern Tier region, 2015.

Variety	Lint Yield (lb/acre)	Lint %	Fiber Length	Micronaire	Fiber Strength (g/tex)	Uniformity Index
DP 1612 B2XF	1,197	36.98	1.19	4.46	30.84	83.93
ST 4946GLB2	1,207	37.07	1.18	4.63	31.71	84.15
Significance				**	**	
Observations	48	49	27	27	27	27
Years	1	1	1	1	1	1
% Wins	50	38	58	83	15	46
Significance levels denoted by + = 0.1; * = 0.05; ** = 0.01 alpha error levels. Data Source: All Monsanto (Breeding, Tech Development) and University trials available for 2015 in the Northern Tier region.						

DP 1612 B2XF was compared to FM 1830GLT in testing conducted in the West Texas region. DP 1612 B2XF showed improvements over FM 1830GLT in lint yield (increase of 79 lbs lint/acre) and lint % (increase of 0.08%) (Table 6).

Table 6. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1612 B2XF and FM 1830GLT in the West Texas region, 2015.

Variety	Lint Yield (lb/acre)	Lint %	Fiber Length	Micronaire	Fiber Strength (g/tex)	Uniformity Index
DP 1612 B2XF	1,217	36.00	1.17	3.98	31.48	82.49
FM 1830GLT	1,138	35.92	1.22	3.96	32.67	83.01
Significance			**		*	**
Observations	17	22	21	21	21	21
Years	1	1	1	1	1	1
% Wins	53	41	0	48	19	25
Significance levels denoted by + = 0.1; * = 0.05; ** = 0.01 alpha error levels. Data Source: All Monsanto (Breeding, Tech Development) and University trials available for 2015 in the West Texas region.						

DP 1612 B2XF was compared to FM 1830GLT in testing conducted across the beltwide region. DP 1612 B2XF showed improvements over FM 1830GLT in lint yield (increase of 123 lbs/acre), and lint % (increase of 0.94%) (Table 7).

Table 7. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1612 B2XF and FM 1830GLT in the Northern High Plains region, 2015.

Variety	Lint Yield (lb/acre)	Lint %	Fiber Length	Micronaire	Fiber Strength (g/tex)	Uniformity Index
DP 1612 B2XF	1,246	35.55	1.16	3.95	31.67	82.46
FM 1830GLT	1,123	34.61	1.21	4.01	32.46	83.13
Significance			**			**
Observations	11	14	13	13	13	13
Years	1	1	1	1	1	1
% Wins	64	36	0	54	23	23
Significance levels denoted by + = 0.1; * = 0.05; ** = 0.01 alpha error levels. Data Source: All Monsanto (Breeding, Tech Development) and University trials available for 2015 in the Northern High Plains region.						

Summary

DP 1612 B2XF is a new Deltapine Class of '16 cotton variety with Bollgard II® XtendFlex® Cotton technology. DP 1612 B2XF is an early maturing variety with high yield potential, excellent fiber length and strength that is best fit for short-season environments, and especially for the West Texas in the Northern High Plains region. This product has large seed size with excellent seedling vigor and growth that is easy to manage. DP 1612 B2XF was found to have similar yield performance when compared to DP 1518 B2XF and DP 1522 B2XF.

B.t. products may not yet be registered in all states. Check with your Monsanto representative for the registration status in your state.
ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. Bollgard II® XtendFlex® cotton and XtendFlex® cotton contains genes that confer tolerance to glyphosate, the active ingredient in Roundup® brand agricultural herbicides, dicamba, the active ingredient in M1691, and glufosinate, the active ingredient in Liberty® brand herbicides. Roundup® brand agricultural herbicides will kill crops that are not tolerant to glyphosate. Dicamba will kill crops that are not tolerant to dicamba. Glufosinate will kill crops that are not tolerant to glufosinate. Contact your Monsanto dealer or refer to Monsanto's Technology Use Guide for recommended Roundup Ready® Xtend Crop System weed control programs. Bollgard II®, Respect the Refuge and Cotton Design®, Roundup Ready® and Roundup® are trademarks of Monsanto Technology LLC. Deltapine® is a registered trademark of Monsanto Company. LibertyLink® and the Water Droplet Design® is a registered trademark of Bayer. All other trademarks are the property of their respective owners. ©2015 Monsanto Company.
DO NOT APPLY DICAMBA HERBICIDE IN-CROP TO Bollgard II XtendFlex Cotton in 2016 unless a dicamba herbicide product is approved that is specifically labeled for that use in the location where you intend to make the application. Contact the U.S. EPA and your state pesticide regulatory agency with any questions about the approval status of dicamba herbicide products for in-crop use with Bollgard II XtendFlex Cotton.
IT IS A VIOLATION OF FEDERAL AND STATE LAW TO MAKE AN IN-CROP APPLICATION OF ANY DICAMBA HERBICIDE PRODUCT ON BOLLGARD II XTENDFLEX COTTON UNLESS THE PRODUCT LABELING SPECIFICALLY AUTHORIZES THAT USE.

Legals as of January 1, 2016