DELTAPINE[®] CLASS OF '18 COTTON VARIETIES David W. Albers Monsanto Company Saint Louis, MO Keylon Gholston Monsanto Company Baldwyn, MS

<u>Abstract</u>

DP 1820 B3XF, DP 1835 B3XF, DP 1845 B3XF, DP 1840 B3XF, and DP 1851 B3XF are Bollgard 3[®] XtendFlex[®] cotton varieties, DP 1823NR B2XF is a Bollgard II[®] XtendFlex[®] cotton variety, and DP 1822 XF is a XtendFlex[®] cotton variety all of which were released for the Deltapine[®] Class of '18. These cotton varieties are described for plant characteristics, disease tolerance, fiber quality, yield potential, management recommendations and regional fits.

Introduction

For the 2018 growing season, Deltapine[®] brand is introducing seven new cotton varieties ranging from early- to mid-maturing cotton varieties ideal for northern cotton-growing regions to full-season varieties excellent for Southeast and Lower Midsouth cotton production. These cotton varieties all offer high yield potential and excellent fiber quality. Several of the newly introduced varieties offer bacterial blight resistance and moderate resistance to verticillium wilt.

Materials and Methods

The data describing Deltapine cotton varieties (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 in December 2017 to develop each data table for these analyses. The rating for plant mapping data (vigor score, fall out and string out rating): 1=Excellent; 9 = Poor.

Results and Discussion

DP 1820 B3XF

DP 1820 B3XF is an early to mid-maturing cotton variety with high yield potential that has excellent fiber quality with low micronaire rating. This variety provides bacterial blight resistance and moderate resistance to verticillium wilt. DP 1820 B3XF has semi-smooth leaf pubescence that is a best fit for northern markets as a companion product to DP 1518B2XF and in the northern high plains and rolling plains region as a companion product to DP 1612 B2XF.

DP 1820 B3XF vs. DP 1518 B2XF and DP 1522 B2XF Plant Mapping Comparisons

The growth and fruiting characteristics of DP 1820 B3XF, as measured by end-of-season plant mapping, are summarized in Table 1. The growth and fruiting variables of DP 1820 B3XF are similar to DP 1518 B2XF and DP 1522 B2XF in Upper Midsouth/Upper Southeast data trials. DP 1820 B3XF requires similar heat units to achieve 100% open boll when compared to the similar early- to mid-maturing cotton products DP 1518 B2XF and DP 1522 B2XF. DP 1820 B3XF has a higher node of first fruiting branch and has improved string-out and fall-out ratings, more total nodes, and a slightly shorter plant height than DP 1518 B2XF and DP 1522 B2XF.

	DP 1820 B3XF	DP 1518 B2XF	DP 1522 B2XF
Vigor Rating	4.06	3.75	3.56
Plant Height (inches)	36.6	39.0	37.4
Total Nodes	21.0	19.8	19.8
Number of Fruiting Nodes	10.6	10.8	10.5
% Est Open	50.0	51.2	49.1
Node of First Fruiting Branch	6.9	6.0	6.4
DD60 to 100% open	269.0	267.7	269.0
Fall Out Rating	1.1	1.4	1.9
String Out Rating	2.4	3.3	3.5

Table 1. Plant mapping comparison of DP 1820 B3XF vs. DP 1518 B2XF and DP 1522 B2XF in Monsanto Trials (2017) in Upper Midsouth/Upper Southeast PCM4 sites.

DP 1820 B3XF vs. DP 1522 B2XF and DP 1612 B2XF Plant Mapping Comparisons

The growth and fruiting characteristics of DP 1820 B3XF, as measured by end-of-season plant mapping, are summarized in Table 2. The growth and fruiting variables of DP 1820 B3XF are similar to DP 1522 B2XF and DP 1612 B2XF in Northern Plains, Texas, and Oklahoma data trials. DP 1820 B3XF requires more heat units to achieve 100% open boll when compared to the similar early- to mid-maturing cotton product DP 1522 B2XF and DP 1612 B2XF in this region. DP 1820 B3XF has higher total nodes and similar plant height when compared to DP 1522 B2XF.

Table 2. Plant mapping comparison of DP 1820 B3XF vs. DP 1522 B2XF and DP 1612 B2XF in Monsanto Trials (2017) in Northern Plains, Texas, and Oklahoma PCM4 sites.

	DP 1820 B3XF	DP 1522 B2XF	DP 1612 B2XF
Vigor Rating	4.3	3.0	2.7
Plant Height (inches)	32.7	32.9	29.4
Total Nodes	21.7	20.7	20.1
Number of Fruiting Nodes	11.3	10.9	11.6
% Est Open	55.2	63.7	69.8
Node of First Fruiting Branch	6.9	6.7	6.1
DD60 to 100% open	244.3	202.3	168.3
Fall Out Rating	2.5	2.5	2.7
String Out Rating	3.3	3.0	3.7

DP 1820 B3XF Yield and Fiber Quality

DP 1820 B3XF was compared to DP 1518 B2XF in testing conducted in the Upper Midsouth and Upper Southeast region. DP 1820 B3XF showed improvements over DP 1518 B2XF in lint % (increase of 2.8), fiber length (increase of 0.05 inches), fiber strength (increase of 2.95 g/tex), and lint yield (increase of 32 lbs lint/acre) (Table 3).

	Lint				Fiber			
	Yield		Fiber		Strength	Uniformity		
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index		
DP 1820 B3XF	1,380	41.8	1.23	4.59	32.5	83.5		
DP 1518 B2XF	1,348	39.0	1.18	4.27	29.5	83.9		
Significance		**	*	**	**			
Observations	24	27	20	22	23	23		
Years	1	1	1	1	1	1		
% Wins	67	96	95	14	100	30		
Significance levels denoted by $+ = 0.1$; $* = 0.05$; $** = 0.01$ alpha error levels.								
Data Source: Upper Midsouth and Upper Southeast data 2017 – all data sources: TechDev and								
Breeding PCM4, NPE	, and Univer	sity.	Breeding PCM4, NPE, and University.					

Table 3. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1820 B3XF and DP 1518 B2XF in the Upper Midsouth and Upper Southeast region, 2017.

DP 1820 B3XF was compared to DP 1522 B2XF in testing conducted in the Upper Midsouth and Upper Southeast regions. DP 1820 B3XF showed improvements over DP 1522 B2XF in lint % (increase of 2.1), fiber length (increase of 0.07 inches), fiber strength (increase of 2.86 g/tex), and lint yield (increase of 63 lbs lint/acre) (Table 4).

Table 4. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1820 B3XF and DP 1522 B2XF in the Upper Midsouth and Upper Southeast regions, 2017.

DI TOLO DUTH MH& D	1 10 22 8 21		per masea	mana opper.	5 6 a an c a b t r c	Brenne, 2 0177
	Lint				Fiber	
	Yield		Fiber		Strength	Uniformity
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index
DP 1820 B3XF	1,346	41.6	1.23	4.60	32.6	83.6
DP 1522 B2XF	1,283	39.5	1.16	4.72	29.7	83.7
Significance		**	**	*	**	
Observations	35	37	21	24	24	24
Years	1	1	1	1	1	1
% Wins	66	97	100	67	100	43
Significance levels denoted by $+ = 0.1$; $* = 0.05$; $** = 0.01$ alpha error levels.						
Data Source: Upper Midsouth and Upper Southeast data 2017 – all data sources: TechDev and						
Breeding PCM4, NPE	, and Univer	sity.				

DP 1820 B3XF was compared to DP 1522 B2XF in testing conducted in the West Texas region. DP 1820 B3XF showed improvements over DP 1522 B2XF in lint % (increase of 2.2), fiber length (increase of 0.09 inches), fiber strength (increase of 1.83 g/tex), and lint yield (increase of 102 lbs lint/acre) (Table 5).

	Lint				Fiber	
	Y ield		Fiber		Strength	Uniformity
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index
DP 1820 B3XF	1,676	40.7	1.23	4.08	30.6	81.7
DP 1522 B2XF	1,574	38.5	1.14	4.05	28.8	81.5
Significance	+	**	**		**	
Observations	11	12	12	13	13	13
Years	1	1	1	1	1	1
% Wins	73	100	100	42	92	54
Significance levels denoted by $+ = 0.1$; $* = 0.05$; $** = 0.01$ alpha error levels.						
Data Source: West Tex	xas data 201	7 – all data :	sources: Tec	hDev and Bre	eding PCM	4, NPE, and
University.						

Table 5. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1820 B3XF and DP 1522 WRF in West Texas region, 2017.

DP 1820 B3XF was compared to DP 1612 B2XF in testing conducted in the West Texas region. DP 1820 B3XF showed improvements over DP 1612 B2XF in lint % (increase of 2.5), fiber length (increase of 0.08 inches), similar fiber strength, and similar lint yield (Table 6).

Table 6. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons ofDP 1820 B3XF and DP 1612 B2XF in West Texas region, 2017.

				U	,		
	Lint				Fiber		
	Yield		Fiber		Strength	Uniformity	
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index	
DP 1820 B3XF	1,740	40.4	1.24	4.09	30.7	81.8	
DP 1612 B2XF	1,739	37.9	1.16	4.16	30.4	82.4	
Significance		**	**			*	
Observations	12	13	11	12	12	12	
Years	1	1	1	1	1	1	
% Wins	33	100	100	75	67	9	
Significance levels denoted by $+ = 0.1$; $* = 0.05$; $** = 0.01$ alpha error levels.							
Data Source: West Tex	xas data 201	7 – all data	sources: Tec	hDev and Bre	eding PCM	4, NPE, and	
University.							

DP 1835 B3XF

DP 1835 B3XF is a mid-maturing cotton variety with excellent yield potential that is broadly adapted throughout the cotton growing region. DP 1835 B3XF has semi-smooth leaf pubescence which is a good fit for Southern Texas and Lower Midsouth markets where it is an excellent companion product to DP 1646 B2XF and in the Northern High Plains and Rolling Plains region as a companion product to DP 1612 B2XF.

DP 1835 B3XF, DP 1522 B2XF, and DP 1646 B2XF Plant Mapping Comparisons

The growth and fruiting characteristics of DP 1835 B3XF, as measured by end-of-season plant mapping, are summarized in Table 7. The growth and fruiting variables of DP 1835 B3XF are similar to DP 1522 B2XF and DP 1646 B2XF in Lower Midsouth/Lower Southeast data trials. DP 1835 B2XF requires similar heat units to achieve 100% open boll when compared to DP 1522 B2XF and DP 1646 B2XF. DP 1835 B2XF has similar number of first fruiting branch as DP 1522 B2XF and a slightly shorter plant height than DP 1522 B2XR and DP 1646 B2XF.

	DP 1835 B3XF	DP 1522 B2XF	DP 1646 B2XF
Vigor Rating	4.0	4.1	4.1
Plant Height (inches)	42.0	43.1	43.3
Total Nodes	21.4	22.6	22.3
Number of Fruiting Nodes	11.3	12.7	13.3
% Est Open	51.6	58.3	57.3
Node of First Fruiting Branch	6.4	6.5	6.1
DD60 to 100% open	277.6	265.6	287.9
Fall Out Rating	2.3	2.6	2.3
String Out Rating	3.8	4.0	3.4

Table 7. Plant mapping comparison of DP 1835 B3XF vs. DP 1522 B2XF and DP 1646 B2XF in Monsanto Trials (2017) in Lower Midsouth/Lower Southeast PCM4 sites.

DP 1835 B3XF was compared to DP 1725 B2XF in testing conducted in Southern and Eastern Texas regions. DP 1835 B3XF showed improvements over DP 1725 B2XF in lint % (increase of 0.5) and lint yield (increase of 91 lbs lint/acre). DP 1835 B3XF had similar fiber strength (Table 8).

Table 8. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1835B3XF and DP 1725 B2XF in South and East Texas regions, 2017.

_				0)	
	Lint				Fiber	
	Yield		Fiber		Strength	Uniformity
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index
DP 1835 B3XF	1,589	44.2	1.15	4.57	29.7	81.9
DP 1725 B2XF	1,498	43.6	1.15	4.59	30.3	82.2
Significance	**				+	
Observations	30	34	21	21	17	21
Years	1	1	1	1	1	1
% Wins	77	59	61	58	41	33
Significance levels denoted by $+ = 0.1$; $* = 0.05$; $** = 0.01$ alpha error levels.						
Data Source: South/Ea	ıst Texas dat	ta 2017 – all	data source	s: TechDev ar	nd Breeding	PCM4,
NPE, and University.						

DP 1835 B3XF was compared to DP 1646 B2XF in testing conducted in South and East Texas regions. DP 1835 B3XF showed improvements over DP 1646 B2XF in lint % (increase of 1.1%) and lint yield (increase of 6 lbs lint/acre). DP 1835 B3XF had similar fiber strength (Table 9).

	Lint				Fiber	
	Yield		Fiber		Strength	Uniformity
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index
DP 1835 B3XF	1,577	44.2	1.15	4.56	29.8	82.1
DP 1646 B2XF	1,571	43.1	1.21	4.52	30.1	82.8
Significance	**	**	**			**
Observations	40	44	30	31	27	31
Years	1	1	1	1	1	1
% Wins	48	82	7	36	41	17
Significance levels der	noted by $+ =$	0.1; * = 0.0)5; ** = 0.01	l alpha error le	evels.	
Data Source: South/Ea	ist Texas dat	a 2017 – all	data source	s: TechDev ar	nd Breeding	PCM4,
NPE, and University.						

Table 9. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1835 B3XF and DP 1646 B2XF in South and East Texas region, 2017.

DP 1835 B3XF was compared to DP 1725 B2XF in testing conducted in the Lower Midsouth region. DP 1835 B3XF showed improvements over DP 1725 B2XF in fiber length (increase of 0.4 inches), fiber strength (increase of 1.05 g/tex), uniformity index (increase of 1.1), and lint yield (increase of 40 lbs lint/acre). DP 1835 B3XF had similar lint percent and micronaire (Table 10).

Table 10. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1835 B3XF and DP 1725 B2XF in the Lower Midsouth region, 2017.

	Lint				Fiber	
	Yield		Fiber		Strength	Uniformity
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index
DP 1835 B3XF	1,175	40.7	1.20	4.11	30.3	82.4
DP 1725 B2XF	1,135	40.9	1.16	4.10	29.3	81.4
Significance			*		+	+
Observations	8	8	4	4	4	4
Years	1	1	1	1	1	1
% Wins	50	43	100	50	100	100
Significance levels denoted by $+ = 0.1$; $* = 0.05$; $** = 0.01$ alpha error levels.						
Data Source: Lower Midsouth data 2017 - all data sources: TechDev and Breeding PCM4,						
NPE, and University.						

DP 1835 B3XF was compared to DP 1646 B2XF in testing conducted in Lower Midsouth region. DP 1835 B3XF showed improvements over DP 1646 B2XF in lint % (increase of 1.6) and fiber strength (increase of 1.55 g/tex) (Table 11).

					U /	
	Lint				Fiber	
	Yield		Fiber		Strength	Uniformity
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index
DP 1835 B3XF	1,204	42.5	1.20	4.37	32.2	83.3
DP 1646 B2XF	1,219	40.8	1.27	4.18	30.6	83.8
Significance		**	**	**	**	
Observations	26	24	21	21	20	21
Years	1	1	1	1	1	1
% Wins	38	79	0	20	100	37
Significance levels denoted by $+ = 0.1$; $* = 0.05$; $** = 0.01$ alpha error levels.						
Data Source: Lower M	lidsouth data	a 2017 – all	data sources	: TechDev and	d Breeding I	PCM4,
NPE, and University.						

Table 11. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1835 B3XF and DP 1646 B2XF in the Lower Midsouth region, 2017.

DP 1835 B3XF was compared to DP 1725 B2XF in testing conducted in the Southeast and Carolinas. DP 1835 B3XF showed improvements over DP 1725 B2XF in fiber length (increase of 0.025 inches), fiber strength (increase of 0.34 g/tex), and had similar lint percent (Table 12).

Table 12. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons ofDP 1835 B3XF and DP 1725 B2XF in the Southeast and Carolinas, 2017.

	Lint				Fiber	
	Yield		Fiber		Strength	Uniformity
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index
DP 1835 B3XF	1,272	42.2	1.15	4.27	29.6	82.7
DP 1725 B2XF	1,289	42.2	1.13	4.36	29.2	82.8
Significance			**			
Observations	25	25	10	12	11	12
Years	1	1	1	1	1	1
% Wins	40	38	90	70	64	50
Significance levels denoted by $+ = 0.1$; $* = 0.05$; $** = 0.01$ alpha error levels.						
Data Source: Southeast and Carolinas data 2017 - all data sources: TechDev and Breeding						
PCM4, NPE, and Univ	versity.					

DP 1835 B3XF was compared to DP 1538 B2XF in testing conducted in the Southeast and Carolinas. DP 1835 B3XF showed improvements over DP 1538 B2XF in lint yield (increase of 24 lbs lint/acre), lint percent (increase of 1.7%), fiber length (increase of 0.07 inches), fiber strength (increase of 2.77g/tex), and uniformity index (increase of 0.3) (Table 13).

	Lint				Fiber		
	Yield		Fiber		Strength	Uniformity	
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index	
DP 1835 B3XF	1,288	42.2	1.15	4.29	29.5	82.6	
DP 1538 B2XF	1,264	40.6	1.07	4.46	26.7	82.3	
Significance		**	**	*	**		
Observations	24	23	10	12	11	11	
Years	1	1	1	1	1	1	
% Wins	58	96	100	67	100	55	
Significance levels denoted by $+ = 0.1$; $* = 0.05$; $** = 0.01$ alpha error levels.							
Data Source: Southeast and Carolinas data 2017 – all data sources: TechDev and Breeding							
PCM4, NPE, and Univ	versity.						

Table 13. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1835 B3XF and DP 1538 B2XF in the Southeast and Carolinas, 2017.

DP 1845 B3XF

String Out Rating

DP 1845 B3XF is a mid-maturing cotton variety with excellent yield potential and fiber quality. This variety provides moderate resistance to bacterial blight and moderate response to verticillium wilt. DP 1845 B3XF is best fit for Southern Texas and Lower Midsouth markets as a companion product to DP 1646 B2XF.

DP 1845 B3XF, DP 1646 B2XF, and DP 1522 B2XF Plant Mapping Comparisons

The growth and fruiting characteristics of DP 1845 B3XF, as measured by end-of-season plant mapping, are summarized in Table 14. The growth and fruiting variables of DP 1845 B3XF are similar to DP 1646 B2XF and DP 1522 B2XF in South and East Texas data trials. DP 1845 B2XF more heat units to achieve 100% open boll when compared to DP 1646 B2XF and DP 1522 B2XF and DP 1646 B2XF. DP 1845 B2XF has a higher number of first fruiting branch, reduced percent boll open and a slightly shorter plant height than DP 1646 B2XF.

(2017) in South and East Texas PCM4 sites.					
	DP 1845 B3XF	DP 1646 B2XF	DP 1522 B2XF		
Vigor Rating	4.2	4.8	4.0		
Plant Height (inches)	42.8	46.1	42.2		
Total Nodes	21.0	20.7	20.4		
Number of Fruiting Nodes	11.1	10.8	10.5		
% Est Open	72.5	76.2	82.6		
Node of First Fruiting Branch	6.8	6.3	6.0		
DD60 to 100% open	196.0	147.1	120.1		
Fall Out Rating	3.2	4.1	4.3		

Table 14. Plant mapping comparison of DP 1845 B3XF vs. DP 1646 B2XF and DP 1522 B2XF in Monsanto Trials (2017) in South and East Texas PCM4 sites.

The growth and fruiting characteristics of DP 1845 B3XF, as measured by end-of-season plant mapping, are summarized in Table 15. The growth and fruiting variables of DP 1845 B3XF are similar to DP 1646 B2XF in Texas Southern Plains data trials. DP 1845 B3XF requires more heat units to achieve 100% open boll when compared to DP 1646 B2XF. DP 1845 B3XF has a higher number of first fruiting branch, reduced percent boll open and a shorter plant height than DP 1646 B2XF.

4.9

5.0

3.7

	DP 1845 B3XF	DP 1646 B2XF
Vigor Rating	3.8	3.4
Plant Height (inches)	30.1	33.0
Total Nodes	20.5	20.8
Number of Fruiting Nodes	10.3	10.8
% Est Open	57.1	59.6
Node of First Fruiting Branch	7.3	7.0
DD60 to 100% open	224.6	213.3
Fall Out Rating	1.8	2.2
String Out Rating	2.9	4.0

Table 15. Plant mapping comparison of DP 1845 B3XF vs. DP 1646 B2XF in Monsanto Trials (2017) in Texas Southern Plains PCM4 sites.

DP 1845 B3XF was compared to DP 1725 B2XF in testing conducted across the Beltwide region. DP 1845 B3XF showed improvements over DP 1725 B2XF in lint yield (increase of 6 lbs lint/acre), fiber length (increase of 0.097 inches), fiber strength (increase of 2.28 g/tex), and uniformity index (increase of 0.6) (Table 16).

Table 16. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1845 B3XF and DP 1725 B2XF across the Beltwide region, 2017.

	Lint				Fiber		
	Yield		Fiber		Strength	Uniformity	
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index	
DP 1845 B3XF	1,439	41.7	1.24	4.03	31.8	82.6	
DP 1725 B2XF	1,433	43.1	1.14	4.47	29.5	82.0	
Significance		**	**	**	**	**	
Observations	49	55	42	42	42	42	
Years	1	1	1	1	1	1	
% Wins	57	16	100	100	86	76	
Significance levels denoted by $+ = 0.1$; $* = 0.05$; $** = 0.01$ alpha error levels.							
Data Source: Beltwide	data 2017 -	- all data sou	irces: TechE	Dev and Breed	ing PCM4,	NPE, and	
University.					=		

DP 1845 B3XF was compared to DP 1646 B2XF in testing conducted across the Beltwide region. DP 1845 B3XF showed improvements over DP 1646 B2XF in fiber length (increase of 0.015 inches), fiber strength (increase of 2.01 g/tex), and uniformity index (increase of 0.1) (Table 17).

	Lint				Fiber		
	Yield		Fiber		Strength	Uniformity	
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index	
DP 1835 B3XF	1,380	41.3	1.24	4.05	31.7	83.0	
DP 1646 B2XF	1,464	41.9	1.23	4.31	29.6	82.9	
Significance	**	**	**	**	**		
Observations	116	119	103	102	103	104	
Years	1	1	1	1	1	1	
% Wins	28	31	73	88	93	54	
Significance levels denoted by $+ = 0.1$; $* = 0.05$; $** = 0.01$ alpha error levels.							
Data Source: Beltwide	data 2017 -	- all data sou	irces: TechE	Dev and Breed	ing PCM4, 1	NPE, and	
University.							

Table 17. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1845 B3XF and DP 1646 B2XF across the Beltwide region, 2017.

DP 1845 B3XF was compared to DP 1725 B2XF in testing conducted in South and East Texas regions. DP 1845 B3XF showed improvements over DP 1725 B2XF in lint yield (increase of 58 lbs lint/acre), fiber length (increase of 0.098 inches), fiber strength (increase of 2.55 g/tex), and uniformity index (increase of 0.7) (Table 18).

Table 18. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons ofDP 1845 B3XF and DP 1725 B2XF in South and East Texas regions, 2017.

	Lint				Fiber		
	Yield		Fiber		Strength	Uniformity	
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index	
DP 1845 B3XF	1,545	42.7	1.24	4.19	32.7	82.8	
DP 1725 B2XF	1,487	43.7	1.14	4.58	30.2	82.1	
Significance	*	**	*	**	**	**	
Observations	31	34	22	22	18	22	
Years	1	1	1	1	1	1	
% Wins	68	18	100	100	89	77	
Significance levels denoted by $+ = 0.1$; $* = 0.05$; $** = 0.01$ alpha error levels.							
Data Source: South and East Texas data 2017 – all data sources: TechDev and Breeding PCM4,							
NPE, and University.							

DP 1845 B3XF was compared to DP 1646 B2XF in testing conducted in South and East Texas regions. DP 1845 B3XF showed improvements over DP 1646 B2XF in fiber length (increase of 0.028 inches), fiber strength (increase of 2.42 g/tex), and uniformity index (increase of 0.2) (Table 19).

	Lint Vield		Fiber		Fiber	Uniformity	
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index	
DP 1845 B3XF	1 526	42.6	1 24	4 23	32.5	83.0	
DI 1845 D574	1,520	42.0	1.27	7.23	52.5	05.0	
DP 1646 B2XF	1,563	43.2	1.21	4.51	30.1	82.8	
Significance	+	**	**	**	**		
Observations	41	44	31	32	28	32	
Years	1	1	1	1	1	1	
% Wins	37	36	83	93	100	65	
Significance levels denoted by $+ = 0.1$; $* = 0.05$; $** = 0.01$ alpha error levels.							
Data Source: South an	d East Texas	s data 2017 -	– all data so	urces: TechDe	ev and Breed	ling PCM4,	
NPE, and University.							

Table 19. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1845 B3XF and DP 1646 B2XF in South and East Texas regions, 2017.

DP 1845 B3XF was compared to DP 1646 B2XF in testing conducted in the West Texas region. DP 1845 B3XF showed improvements over DP 1646 B2XF in lint yield (increase of 31 lbs lint/acre), fiber strength (increase of 1.54 g/tex), and uniformity index (increase of 0.1) (Table 20).

Table 20. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1845 B3XF and DP 1646 B2XF in West Texas, 2017.

						· · · · · · · · · · · · · · · · · · ·	
	Lint				Fiber		
	Yield		Fiber		Strength	Uniformity	
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index	
DP 1845 B3XF	1,682	40.3	1.24	3.79	30.1	81.5	
DP 1646 B2XF	1,651	40.5	1.23	3.92	28.5	81.4	
Significance				*	**		
Observations	21	21	20	19	20	20	
Years	1	1	1	1	1	1	
% Wins	43	33	78	84	95	50	
Significance levels denoted by $+ = 0.1$; $* = 0.05$; $** = 0.01$ alpha error levels.							
Data Source: West Tex	xas data 201	7 – all data :	sources: Tec	hDev and Bre	eding PCM	4, NPE, and	
University.							

DP 1845 B3XF was compared to DP 1612 B2XF in testing conducted in the West Texas region. DP 1845 B3XF showed improvements over DP 1612 B2XF in lint yield (increase of 73 lbs lint/acre), lint percent (increase of 2.2%), and fiber length (increase of 0.076) (Table 21).

	Lint				Fiber		
	Yield		Fiber		Strength	Uniformity	
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index	
DP 1845 B3XF	1,723	40.1	1.23	3.86	30.2	81.9	
DP 1612 B2XF	1,650	37.9	1.16	4.16	30.3	82.4	
Significance		**	**	**		*	
Observations	14	15	14	14	14	14	
Years	1	1	1	1	1	1	
% Wins	57	87	100	86	50	14	
Significance levels denoted by $+ = 0.1$; $* = 0.05$; $** = 0.01$ alpha error levels.							
Data Source: West Texas data 2017 – all data sources: TechDev and Breeding PCM4, NPE, and							
University.							

Table 21. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1845 B3XF and DP 1612 B2XF in West Texas, 2017.

DP 1840 B3XF

DP 1840 B3XF is a mid- to full-maturing cotton variety with competitive yields and improved fiber quality. DP 1840 B3XF has smooth leaf pubescence and offers bacterial blight resistance. This variety is a best fit for the Southeast region and the Carolina markets. DP 1840 B3XF is an excellent position for growers who have planted DP 1538 B2XF in the past as it offers improved fiber length, fiber strength, and micronaire when compared to DP 1538 B2XF.

DP 1840 B3XF, DP 1522 B2XF, and DP 1646 B2XF Plant Mapping Comparisons

Number of Fruiting Nodes

DD60 to 100% open

Fall Out Rating

String Out Rating

Node of First Fruiting Branch

% Est Open

The growth and fruiting characteristics of DP 1840 B3XF, as measured by end-of-season plant mapping, are summarized in Table 22. The growth and fruiting variables of DP 1840 B3XF are similar to DP 1646 B2XF and DP 1522 B2XF in in-season data trials. DP 1840 B2XF requires more heat units to achieve 100% open boll when compared to DP 1646 B2XF and DP 1522 B2XF. DP 1840 B2XF has a higher number of first fruiting branch, reduced percent boll open, and increased plant height when compared to DP 1646 B2XR and DP 1522 B2XF.

				-
	(2017)) in In-season Data 1	PCM4 sites.	
		DP 1840 B3XF	DP 1646 B2XF	DP 1522 B2XF
Vigor Rating		4.7	4.1	4.1
Plant Height (inches)		43.8	43.3	43.1
Total Nodes		23.1	22.3	22.6

13.3

57.3

6.1

287.9

2.3

3.4

12.7

58.3

6.5

265.6

2.6

4.0

12.4

43.8

6.8

390.8

2.0

3.4

Table 22. Plant mapping comparison of	of DP 1840 B3XF vs. D	P 1646B2XF and DP	1522 B2XF in I	Monsanto '	Trials
	(2017) in In-season Dat	ta PCM4 sites.			

DP 1840 B3XF was compared to DP 1725 B2XF in testing conducted in Lower Southeast and Carolina regions. DP 1840 B3XF showed improvements over DP 1725 B2XF in fiber length (increase of 0.051 inches) and fiber strength (increase of 0.80 g/tex) (Table 23).

Di 1655 Dorit und Di 1725 Dorit in Dower Soundast und Curonna regions, 2017.							
	Lint				Fiber		
	Yield		Fiber		Strength	Uniformity	
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index	
DP 1840 B3XF	1,239	39.4	1.18	4.26	29.9	83.0	
DP 1725 B2XF	1,255	42.0	1.13	4.39	29.1	83.0	
Significance		**	**				
Observations	20	20	7	8	8	8	
Years	1	1	1	1	1	1	
% Wins	50	5	100	62	62	50	
Significance levels denoted by $+ = 0.1$; $* = 0.05$; $** = 0.01$ alpha error levels.							
Data Source: Lower Southeast and Carolinas data 2017 – all data sources: TechDev and							
Breeding PCM4, NPE, and University.							

Table 23. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1835 B3XF and DP 1725 B2XF in Lower Southeast and Carolina regions, 2017.

DP 1840 B3XF was compared to DP 1646 B2XF in testing conducted in Lower Southeast and Carolina regions. DP 1840 B3XF showed improvements over DP 1646 B2XF in fiber strength (increase of 1.33 g/tex) (Table 24).

Table 24. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1840 B3XF and DP 1646 B2XF in Lower Southeast and Carolina regions, 2017.

	Lint				Fiber	
	Yield		Fiber		Strength	Uniformity
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index
DP 1840 B3XF	1,211	39.4	1.19	4.34	30.4	83.4
DP 1646 B2XF	1,312	41.4	1.21	4.41	29.1	83.6
Significance	**	**	**		**	
Observations	47	47	26	26	27	27
Years	1	1	1	1	1	1
% Wins	26	4	23	65	85	42
Significance levels denoted by $+ = 0.1$; $* = 0.05$; $** = 0.01$ alpha error levels.						
Data Source: Lower Southeast and Carolinas data 2017 - all data sources: TechDev and						
Breeding PCM4, NPE, and University.						

DP 1840 B3XF was compared to DP 1639 B2XF in testing conducted in Lower Southeast and Carolina regions. DP 1840 B3XF showed improvements over DP 1639 B2XF in lint yield (increase of 80 lbs lint/acre), fiber length (increase of 0.07 inches), fiber strength (increase of 0.33 g/tex) (Table 25).

	Lint				Fiber	
	Yield		Fiber		Strength	Uniformity
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index
DP 1840 B3XF	1,239	39.4	1.18	4.26	29.9	83.0
DP 1639 B2XF	1,159	40.3	1.11	4.55	29.5	83.5
Significance	**	**	**	**		
Observations	20	20	7	8	8	8
Years	1	1	1	1	1	1
% Wins	75	20	100	100	62	25
Significance levels denoted by $+ = 0.1$; $* = 0.05$; $** = 0.01$ alpha error levels.						
Data Source: Lower Southeast and Carolinas data 2017 – all data sources: TechDev and						
Breeding PCM4, NPE, and University.						

Table 25.	Lint yield,	lint %, f	iber length,	micronaire,	fiber strength,	and uniformity	index	comparisons	of
	DP 1840 E	33XF and	d DP 1639 E	32XF in Lov	ver Southeast a	and Carolina reg	gions, 2	2017.	

DP 1840 B3XF was compared to DP 1538 B2XF in testing conducted in Lower Southeast and Carolina regions. DP 1840 B3XF showed improvements over DP 1538 B2XF in lint yield (increase of 56 lbs lint/acre), fiber length (increase of 0.10 inches), micronaire (decrease of 0.25), and fiber strength (increase of 3.21 g/tex) (Table 26).

Table 26. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1840 B3XF and DP 1538 B2XF in Lower Southeast and Carolina regions, 2017.

	Lint				Fiber	
	Yield		Fiber		Strength	Uniformity
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index
DP 1840 B3XF	1,259	39.3	1.18	4.27	30.0	82.9
DP 1538 B2XF	1,203	40.3	1.07	4.52	26.8	82.4
Significance	*	*	**	**	**	+
Observations	19	18	7	8	8	7
Years	1	1	1	1	1	1
% Wins	79	19	100	100	100	86
Significance levels denoted by $+ = 0.1$; $* = 0.05$; $** = 0.01$ alpha error levels.						
Data Source: Lower Southeast and Carolinas data 2017 - all data sources: TechDev and						
Breeding PCM4, NPE	Breeding PCM4, NPE, and University.					

DP 1851 B3XF

DP 1851 B3XF is a full-season cotton variety with an excellent combination of high yield potential and fiber quality. DP 1851 B3XF has smooth leaf pubescence and offers partial resistance to bacterial blight. This variety is a best fit for the Southeast and Lower Midsouth regions.

DP 1851 B3XF, DP 1646 B2XF, and DP 1522 B2XF Plant Mapping Comparisons

The growth and fruiting characteristics of DP 1851 B3XF, as measured by end-of-season plant mapping, are summarized in Table 25. The growth and fruiting variables of DP 1851 B3XF are similar to DP 1646 B2XF and DP 1522 B2XF in in-season data trials. DP 1851 B3XF requires more heat units to achieve 100% open boll when compared to DP 1646 B2XF and DP 1522 B2XF. DP 1851 B3XF has a higher node of first fruiting branch, a later maturity, and a slight increase of plant height when compared to DP 1646 B2XR and DP 1522 B2XF.

	DP 1851 B3XF	DP 1646 B2XF	DP 1522 B2XF
Vigor Rating	4.0	4.1	4.1
Plant Height (inches)	44.4	43.3	43.1
Total Nodes	22.5	22.3	22.6
Number of Fruiting Nodes	12.9	13.3	12.7
% Est Open	48.1	57.3	58.3
Node of First Fruiting Branch	6.6	6.1	6.5
DD60 to 100% open	374.1	287.9	265.6
Fall Out Rating	1.9	2.3	2.6
String Out Rating	3.3	3.4	4.0

Table 27. Plant mapping comparison of DP 1851 B3XF vs. DP 1646 B2XF and DP 1522 B2XF in Monsanto Trials (2017) in In-season Data PCM4 sites.

DP 1851 B3XF was compared to DP 1725 B2XF in testing conducted in Southeast and Carolina regions. DP 1851 B3XF showed improvements over DP 1725 B2XF in fiber length (increase of 0.014 inches) and fiber strength (increase of 2.19 g/tex) (Table 28). DP 1851 B3XF and DP 1725 B2XF had similar lint yield.

Table 28. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1851 B3XF and DP 1725 B2XF in Southeast and Carolina regions, 2017.

	Lint				Fiber	
	Yıeld		Fiber		Strength	Uniformity
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index
DP 1851 B3XF	1,251	39.9	1.14	4.05	31.2	82.7
DP 1725 B2XF	1,255	42.0	1.13	4.39	29.1	83.0
Significance		**		**	**	
Observations	20	20	7	8	8	8
Years	1	1	1	1	1	1
% Wins	40	10	57	100	100	50
Significance levels denoted by $+ = 0.1$; $* = 0.05$; $** = 0.01$ alpha error levels.						
Data Source: Southeast and Carolinas data 2017 – all data sources: TechDev and Breeding						
PCM4, NPE, and Univ	versity.					

DP 1851 B3XF was compared to DP 1646 B2XF in testing conducted in Southeast and Carolina regions. DP 1851 B3XF showed improvements over DP 1646 B2XF in fiber strength (increase of 2.50 g/tex) and uniformity index (increase of 0.1) (Table 29).

D1 1051 D5A1 and D1 1040 D2A1 in Southeast and Carolina regions, 2017.						
	Lint				Fiber	
	Yield		Fiber		Strength	Uniformity
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index
DP 1851 B3XF	1,205	40.2	1.16	4.23	31.6	83.7
DP 1646 B2XF	1,312	41.4	1.21	4.39	29.1	83.6
Significance	**	**	**	**	**	
Observations	47	47	26	25	27	27
Years	1	1	1	1	1	1
% Wins	47	47	26	25	27	27
Significance levels denoted by $+ = 0.1$; * = 0.05; ** = 0.01 alpha error levels.						
Data Source: Southeast and Carolinas data 2017 – all data sources: TechDev and Breeding						
PCM4, NPE, and University.						

Table 29. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1851 B3XF and DP 1646 B2XF in Southeast and Carolina regions, 2017.

DP 1851 B3XF was compared to DP 1639 B2XF in testing conducted in Southeast and Carolina regions. DP 1851 B3XF showed improvements over DP 1639 B2XF in lint yield (increase of 92 lbs lint/acre), fiber length (increase of 0.035 inches), and fiber strength (increase of 1.72 g/tex) (Table 30).

Table 30. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1851 B3XF and DP 1639 B2XF in Southeast and Carolina regions, 2017.

	Lint				Fiber	
	Yield		Fiber		Strength	Uniformity
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index
DP 1851 B3XF	1,251	39.9	1.14	4.05	31.2	82.7
DP 1639 B2XF	1,159	40.3	1.11	4.55	29.5	83.5
Significance	*		**	**	**	+
Observations	20	20	7	8	8	8
Years	1	1	1	1	1	1
% Wins	70	35	100	100	100	25
Significance levels denoted by $+ = 0.1$; $* = 0.05$; $** = 0.01$ alpha error levels.						
Data Source: Southeast and Carolinas data 2017 - all data sources: TechDev and Breeding						
PCM4, NPE, and Univ	versity.					

DP 1851 B3XF was compared to PHY 333 WRF in testing conducted in Southeast and Carolina regions. DP 1851 B3XF showed improvements over PHY 333 WRF in lint yield (increase of 59 lbs lint/acre), lint percent (increase of 0.4%), fiber strength (increase of 1.01g/tex), and had similar fiber length (Table 31).

DI 1651 D5Ai and 1111 555 WRI in Southeast and Carolinia regions, 2017.							
	Lint				Fiber		
	Yield		Fiber		Strength	Uniformity	
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index	
DP 1851 B3XF	1,366	39.6	1.14	4.03	31.0	82.5	
PHY 333 WRF	1,307	39.02	1.13	4.12	30.0	83.5	
Significance					+	+	
Observations	14	14	6	7	7	7	
Years	1	1	1	1	1	1	
% Wins	64	57	50	57	57	17	
Significance levels denoted by $+ = 0.1$; * = 0.05; ** = 0.01 alpha error levels.							
Data Source: Southeast and Carolinas data 2017 – all data sources: TechDev and Breeding							
PCM4, NPE, and University.							

Table 31. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1851 B3XF and PHY 333 WRF in Southeast and Carolina regions, 2017.

DP 1823NR B2XF

DP 1823NR B2XF is an early to mid-maturing cotton variety offering nematode resistance. DP 1823NR B2XF has semi-smooth leaf pubescence. The variety offers excellent late-season plant health, fiber length, and low micronaire. In short-season environments, DP 1823NR B2XF requires the use of plant growth regulators for maturity management.

DP 1823NR B2XF, DP 1518 B2XF, and DP 1522 B2XF Plant Mapping Comparisons

The growth and fruiting characteristics of DP 1823NR B2XF, as measured by end-of-season plant mapping, are summarized in Table 30. The growth and fruiting variables of DP 1823NR B2XF are similar to DP 1518 B2XF and DP 1522 B2XF in Upper Midsouth and Upper Southeast data trials. DP 1823NR B2XF requires slightly more heat units to achieve 100% open boll when compared to DP 1518 B2XF and DP 1522 B2XF. DP 1823NR B2XF has a higher node of first fruiting branch, similar maturity, vigor rating and plant height when compared to DP 1518 B2XR and DP 1522 B2XF.

	DP 1823NR B2XF	DP 1518 B2XF	DP 1522 B2XF
Vigor Rating	3.44	3.75	3.56
Plant Height (inches)	38.5	39.0	37.4
Total Nodes	21.2	19.8	19.8
Number of Fruiting Nodes	10.8	10.8	10.5
% Est Open	50.4	51.2	49.1
Node of First Fruiting Branch	7.0	6.0	6.4
DD60 to 100% open	276.7	267.7	269.0
Fall Out Rating	1.4	1.4	1.9
String Out Rating	2.4	3.3	3.5

Table 30. Plant mapping comparison of DP 1823NR B2XF vs. DP 1518 B2XF and DP 1522 B2XF in Monsanto Trials (2017) in Upper Midsouth and Upper Southeast Data PCM4 sites.

DP 1823NR B2XF was compared to DP 1725 B2XF in testing conducted in Midsouth regions. DP 1823NR B2XF showed improvements over DP 1725 B2XF in fiber length (increase of 0.029 inches), fiber strength (increase of 0.65 g/tex), and uniformity index (Table 31). DP 1823NR B2XF and DP 1725 B2XF had similar lint yield.

	Lint				Fiber	
	Viald		Fiber		Strongth	Uniformity
	i leiu		FIDEI		Suengui	Onnormity
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index
DP 1823NR B3XF	1,327	39.9	1.20	3.78	30.5	82.3
DP 1725 B2XF	1,356	40.9	1.17	3.89	29.8	81.8
Significance		*	+			
Observations	11	12	5	5	6	6
Years	1	1	1	1	1	1
% Wins	55	17	100	60	67	83
Significance levels denoted by $+ = 0.1$; $* = 0.05$; $** = 0.01$ alpha error levels.						
Data Source: Midsouth data 2017 – all data sources: TechDev and Breeding PCM4, NPE, and						
University.						

Table 31. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1823NR B2XF and DP 1725 B2XF in the Midsouth region, 2017.

DP 1823NR B2XF was compared to DP 1614 B2XF in testing conducted in the Midsouth region. DP 1823NR B2XF showed improvements over DP 1614 B2XF in fiber strength (increase of 0.73 g/tex). DP 1823NR B2XF and DP 1614 B2XF had similar lint yield and fiber length (Table 32).

Table 32. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons ofDP 1823NR B2XF and DP 1614 B2XF in the Midsouth region, 2017.

	Lint				Fiber	
	Yield		Fiber		Strength	Uniformity
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index
DP 1823NR B3XF	1,288	39.8	1.22	3.75	30.7	82.3
DP 1614 B2XF	1,299	40.4	1.23	4.34	30.0	83.7
Significance				*		*
Observations	11	12	6	6	6	6
Years	1	1	1	1	1	1
% Wins	27	17	33	83	67	17
Significance levels der	noted by + =	= 0.1; * = 0.0	05; ** = 0.01	l alpha error le	evels.	
Data Source: Midsouth data 2017 - all data sources: TechDev and Breeding PCM4, NPE, and						
University.						

DP 1823NR B3XF was compared to DP 1518 B2XF in testing conducted in Midsouth regions. DP 1823NR B2XF showed improvements over DP 1518 B2XF in lint percent (increase of 2.7%), fiber length (increase of 0.009 inches), and fiber strength (increase of 1.51 g/tex) (Table 33).

	Lint				Fiber		
	Yield		Fiber		Strength	Uniformity	
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index	
DP 1823NR B3XF	1,322	40.8	1.22	4.11	30.9	83.8	
DP 1518 B2XF	1,350	38.1	1.21	4.26	29.4	84.1	
Significance		**		+	*		
Observations	19	21	13	13	14	14	
Years	1	1	1	1	1	1	
% Wins	42	90	62	77	77	50	
Significance levels denoted by $+ = 0.1$; $* = 0.05$; $** = 0.01$ alpha error levels.							
Data Source: Midsouth data 2017 - all data sources: TechDev and Breeding PCM4, NPE, and							
University.							

Table 33. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1823NR B3XF and DP 1518 B2XF in the Midsouth region, 2017.

DP 1823NR B3XF was compared to DP 1522 B2XF in testing conducted in the Midsouth region. DP 1823NR B2XF showed improvements over DP 1522 B2XF in lint yield (increase of 55 lbs lint/acre), lint percent (increase of 1.3%), fiber length (increase of 0.028 inches), and fiber strength (increase of 0.31 g/tex) (Table 34).

Table 34. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 1823NR B2XF and DP 1522 B2XF in the Midsouth region, 2017.

	Lint				Fiber		
	Yield		Fiber		Strength	Uniformity	
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index	
DP 1823NR B2XF	1,292	40.6	1.22	4.12	31.0	83.9	
DP 1522 B2XF	1,237	39.3	1.19	4.62	30.6	84.0	
Significance		**	**	**			
Observations	22	23	14	14	14	14	
Years	1	1	1	1	1	1	
% Wins	59	91	92	93	54	50	
Significance levels denoted by $+ = 0.1$; $* = 0.05$; $** = 0.01$ alpha error levels.							
Data Source: Midsouth data 2017 – all data sources: TechDev and Breeding PCM4, NPE, and							
University.							

DP 1823NR B2XF was compared to DP 1820 B2XF, DP 1522 B2XF, and DP 1510 B2XF in testing conducted in Campbell, MO to evaluate variety performance on moderate to high root knot nematode pressure. DP 1823NR B2XF showed lint yield improvements over DP 1820 B2XF (increase of 95 lbs lint/acre), DP 1522 B2XF (increase of 116 lbs lint/acre), and DP 1510 B2XF (increase of 127 lbs lint/acre). (Table 35).

Table 35. Lint yield comparisons of DP 1823NR B2XF to DP 1820 B3XF, DP 1522 B2XF and DP 1510 B2XF in moderate to high root knot nematode pressure. Campbell, MO, 2017.

	Lint Yield (lbs			
Variety	lint/acre)			
DP 1823NR B2XF	1,464			
DP 1820 B3XF	1,369			
DP 1522 B2XF	1,348			
DP 1510 B2XF	1,337			
Significance levels denoted by + = 0.1; * = 0.05; ** = 0.01 alpha error levels. Data Source: 2017 PCM4 plot, Mack Burge, Campbell, MO.				

DP 1822 XF

DP 1822 XF is an early- to mid- maturing cotton variety that offers large seed size and excellent early-season vigor. DP 1822 XF has semi-smooth leaf pubescence and offers bacterial blight resistance and moderate resistance to verticillium wilt. This variety is a best fit for the West Texas regions as it has shown good tough acre performance.

DP 1822 XF, DP 1612 B2XF, and DP 1522 B2XF Plant Mapping Comparisons

The growth and fruiting characteristics of DP 1822 XF, as measured by end-of-season plant mapping, are summarized in Table 36. The growth and fruiting variables of DP 1822 XF are similar to DP 1612 B2XF and DP 1522 B2XF in West Texas data trials. DP 1822 XF requires more heat units to achieve 100% open boll when compared to DP 1612 B2XF and similar to DP 1522 B2XF. DP 1822 B2XF has a higher node of first fruiting branch and increased total nodes when compared to DP 1612 B2XR and DP 1522 B2XF.

Table 36. Plant mapping comparison of DP 1822 XF vs. DP 1612 B2XF and DP 1522 B2XF in Monsanto Trials (2017) in In-season Data PCM4 sites.

(2017) in in-season Data i Civit sites.							
	DP 1822 XF	DP 1612 B2XF	DP 1522 B2XF				
Vigor Rating	2.6	2.6	2.7				
Plant Height (inches)	31.3	29.4	32.9				
Total Nodes	21.5	20.1	20.7				
Number of Fruiting Nodes	11.4	11.6	10.9				
% Est Open	65.4	69.8	63.7				
Node of First Fruiting Branch	7.0	6.1	6.7				
DD60 to 100% open	197.0	168	202				
Fall Out Rating	2.3	2.7	2.5				
String Out Rating	3.0	3.7	3.0				

DP 1822 XF was compared to DP 1646 B2XF in testing conducted in the West Texas region. DP 1822 XF showed improvements over DP 1646 B2XF in fiber strength (increase of 1.87 g/tex) (Table 37). DP 1822 XF and DP 1646 B2XF had similar lint yield.

Table 37. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons ofDP 1822 XF and DP 1646 B2XF in the West Texas region, 2017.

	Lint				Fiber		
	Yield		Fiber		Strength	Uniformity	
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index	
DP 1822 XF	1,683	37.9	1.20	4.27	30.4	81.8	
DP 1646 B2XF	1,651	40.4	1.21	4.04	28.5	81.5	
Significance		**	+	**	**		
Observations	12	14	11	11	11	11	
Years	2	2	2	2	2	2	
% Wins	50	14	27	9	82	60	
Significance levels denoted by $+ = 0.1$; $* = 0.05$; $** = 0.01$ alpha error levels.							
Data Source: West Texas data 2017 – all data sources: TechDev and Breeding PCM4, NPE, and							
University.							

DP 1822 XF was compared to DP 1612 B2XF in testing conducted in the West Texas region. DP 1822 XF showed improvements over DP 1612 B2XF in fiber strength (increase of 0.99 g/tex) (Table 38). DP 1822 XF and DP 1612 B2XF were similar in lint yield, lint percent, and fiber length.

	Lint				Fiber			
	Yield		Fiber		Strength	Uniformity		
Variety	(lb/acre)	Lint %	Length	Micronaire	(g/tex)	Index		
DP 1822 XF	1,715	37.7	1.22	4.19	30.7	82.0		
DP 1612 B2XF	1,693	37.7	1.16	4.27	29.7	82.0		
Significance			**		*			
Observations	23	25	20	20	20	20		
Years	2	2	2	2	2	2		
% Wins	52	68	95	80	74	45		
Significance levels denoted by $+ = 0.1$; $* = 0.05$; $** = 0.01$ alpha error levels.								
Data Source: West Texas data 2017 - all data sources: TechDev and Breeding PCM4, NPE, and								
University.								

Table 38. Lint yield, lint %, fil	ber length, mic	ronaire, fiber	strength, and	l uniformity i	ndex comparisons of	f
DP 1822 X	KF and DP 161	2 B2XF in the	e West Texas	s region, 2017	7.	

<u>Summary</u>

DP 1820 B3XF, DP 1835 B3XF, DP 1845 B3XF, DP 1840 B3XF, DP 1851 B3XF, DP 1823NR B2XF, and DP 1822 XF cotton varieties have been selected for the Deltapine[®] Class of '18.

DP 1820 B3XF is an early- to mid-maturing cotton variety with high yield potential that has excellent fiber quality. This variety provides bacterial blight resistance and moderate resistance to verticillium wilt and is best fit for Northern cotton-growing markets.

DP 1835 B3XF is a mid-maturing cotton variety with excellent yield potential that is broadly adapted throughout the cotton growing region. This product will be primarily marketed in the Midsouth, Southeast, and South Texas regions. DP 1835 B3XF has semi-smooth leaf pubescence.

DP 1845 B3XF is a mid-maturing cotton variety with excellent yield potential and fiber quality. This variety provides moderate resistance to bacterial blight and moderate response to verticillium wilt. DP 1845 B3XF is best fit for Southern Texas and Lower Midsouth markets.

DP 1840 B3XF is a mid- to full-maturing cotton variety with competitive yields and improved fiber quality. DP 1840 B3XF has smooth leaf pubescence and offers bacterial blight resistance. This variety is a best fit for the Southeast region and the Carolina markets. This new variety is considered a "workhorse" like DP 1538 B2XF and it will be a similar fit to those acres.

DP 1851 B3XF is a full-season cotton variety with an excellent combination of high yield potential and fiber quality. DP 1851 B3XF has smooth leaf pubescence and offers partial resistance to bacterial blight. This variety is a best fit for the Southeast and the Carolina region.

DP 1823NR B2XF is an early to mid-maturing cotton variety offering nematode resistance. DP 1823NR B2XF has semi-smooth leaf pubescence. The variety offers excellent late-season plant health, fiber length, and low micronaire. In short-season environments, DP 1823NR B2XF requires the use of plant growth regulators for maturity management.

DP 1822 XF is an early- to mid- maturing cotton variety that offers large seed size and excellent early-season vigor. DP 1822 XF has semi-smooth leaf pubescence and offers bacterial blight resistance and moderate resistance to verticillium wilt. This variety is a best fit for the West Texas regions as it has shown good tough acre performance.

ALWAYS READ AND FOLLOW DIRECTIONS FOR USE ON PESTICIDE LABELING. IT IS A VIOLATION OF FEDERAL AND STATE LAW to use any pesticide product other than in accordance with its labeling. NOT ALL formulations of dicamba or glyphosate are approved for in-crop use with cotton with XtendFlex® Technology. ONLY USE FORMULATIONS THAT ARE SPECIFICALLY LABELED FOR SUCH USES AND APPROVED FOR SUCH USE IN THE STATE OF APPLICATION. May not be approved in all states. 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 cotton with XtendFlex® Technology.

cotton with XtendFlex® Technology contains genes that confer tolerance to glyphosate, dicamba and glufosinate. Glyphosate 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 weed control programs.

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.

Always read and follow IRM, where applicable, grain marketing and all other stewardship practices and pesticide label directions. Bollgard®, Bollgard II® and XtendFlex®, Respect the Refuge and Cotton Design® are registered trademarks of Monsanto Technology LLC. Deltapine® is a registered trademark of Monsanto Company. LibertyLink® and LibertyLink® and the Water Droplet Design® are registered trademarks of Bayer. All other trademarks are the property of their respective owners. ©2017 Monsanto Company. 01042018CRB





