DELTAPINE® CLASS OF '20 COTTON VARIETIES

David W. Albers
Bayer Crop Science
Saint Louis, MO
Keylon Gholston
Bayer Crop Science
Baldwyn, MS
Dawn Fraser
Bayer Crop Science
Mt. Olive, NC
Darren Jones
Bayer Crop Science
Lubbock, TX

Abstract

DP 2012 B3XF, DP 2020 B3XF, DP 2038 B3XF, DP 2055 B3XF, DP 2044 B3XF, and DP 2022 B3XF, are Bollgard® 3 XtendFlex® cotton varieties all released for the Deltapine® Class of '20. These cotton varieties are described for plant characteristics, disease tolerance, fiber quality, yield potential, management recommendations and regional fit.

Introduction

For the 2020 growing season, Deltapine® brand is introducing six new cotton varieties ranging from mid-full maturing cotton varieties ideal for Texas regions to early maturing cotton varieties ideal for Northern High Plains/Panhandle Texas regions. These cotton varieties all offer high yield potential and excellent fiber quality. Several of the newly introduced varieties offer bacterial blight resistance.

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Materials and Methods

The data describing Deltapine cotton varieties (along with internal and competitive check varieties) was obtained from the following sources: Bayer breeder trials, Bayer on-farm trials, and University trials. Plant growth, fruiting, and maturity comparisons were made by plant mapping a subset of the Bayer on-farm trials when approximately 50% of the bolls were open. All available yield, fiber quality, and plant mapping data were queried in December 2018 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 2012 B3XF

DP 2012 B3XF is an early-maturing cotton variety with high yield potential. This variety is a broadly adapted to Midsouth, Southeast, and Texas regions. DP 2012 B3XF has smooth leaf pubescence and is resistant to bacterial blight with moderate tolerance to verticillium. DP 2012 B3XF has strong terminal growth and requires PGR management in short season environments.

DP 2012 B3XF Yield and Fiber Quality

DP 2012 B3XF was compared to DP 1646 B2XF in testing conducted in the Midsouth and Southeast regions. DP 2012 B3XF showed similar yield compared to DP 1646 B2XF), increased fiber strength (increase of 1 g/tex). DP 2012 B2XF had similar micronaire and similar uniformity index when compared to DP 1646 B2XF; conversely DP 1646 B2XF had higher lint percent and longer fiber length, compared to DP 2012 B3XF (Table 1).

Table 1. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 2012 B3XF and DP 1646 B2XF in the Midsouth and Southeast region, 2017-2019.

Variety	Lint Yield (lb/acre)	Lint %	Fiber Length	Micronaire	Fiber Strength (g/tex)	Uniformity Index
DP 2012 B3XF	1,521	40.6	1.20	4.30	30.6	83.2
DP 1646 B2XF	1,520	42.1	1.24	4.30	29.6	83.1
Significance		**	**		**	
Observations	73	82	66	68	68	68
Years	3	3	3	3	3	3
% Wins	45	10	9	55	76	55
Significance levels denoted by + = 0.1; * = 0.05; ** = 0.01 alpha error levels. Data Source: Midsouth and Southeast regions 2017-2019 – all data sources: TechDev and Breeding PCM4, NPE, and University.						

DP 2012 B3XF was compared to DP 1646 B2XF in testing conducted in the Texas regions. DP 2012 B3XF showed improvements over DP 1646 B2XF in uniformity index (increase of 0.2). DP 2012 B2XF had similar yield potential and similar micronaire when compared to DP 1646 B2XF (Table 2).

Table 2. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 2012 B3XF and DP 1646 B2XF in Texas regions, 2017-2019.

Variety	Lint Yield (lb/acre)	Lint %	Fiber Length	Micronaire	Fiber Strength (g/tex)	Uniformity Index
DP 2012 B3XF	1,413	40.7	1.17	4.18	29.8	82.7
DP 1646 B2XF	1,422	42.3	1.22	4.21	30.1	82.5
Significance		**	**			+
Observations	85	95	74	78	79	79
Years	3	3	3	3	3	3
% Wins	51	9	4	58	47	57
Significance levels denoted by + = 0.1; * = 0.05; ** = 0.01 alpha error levels. Data Source: Texas regions 2017-2019 – all data sources: TechDev and Breeding PCM4, NPE, and University.						

DP 2020 B3XF

DP 2020 B3XF is an early-mid maturing cotton variety with excellent fiber quality and length best adapted to the Midsouth, Southeast, and Texas. DP 2020 B3XF has semi-smooth leaf pubescence and is resistant to bacterial blight and moderately tolerant to verticillium. DP 2020 B3XF has above-average emergence. DP 2020 B3XF requires PGR management in short season environments.

DP 2020 B3XF Yield and Fiber Quality

DP 2020 B3XF was compared to DP 1518 B2XF in testing conducted in Midsouth and Southeast regions. DP 2020 B3XF showed improvements over DP 1518 B2XF in lint yield (increase of 84 lbs lint/acre), fiber length (increase of 0.05 inches), fiber strength (increase of 1.4 g/tex), and uniformity (increase of 0.40) (Table 3). DP 2020 B2XF had similar lint % when compared to DP 1518 B2XF (Table 3).

Table 3. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 2020 B3XF and DP 1612 B2XF in Midsouth and Southeast regions, 2017-2019.

Variety	Lint Yield (lb/acre)	Lint %	Fiber Length	Micronaire	Fiber Strength (g/tex)	Uniformity Index
DP 2020 B3XF	1,567	40.4	1.24	4.22	30.8	83.7
DP 1518 B2XF	1,483	40.4	1.19	4.27	29.5	83.4
Significance	*		**		**	+
Observations	37	41	34	34	34	34
Years	2	2	2	2	2	2
% Wins	65	51	100	55	88	71
Significance levels denoted by + = 0.1; * = 0.05; ** = 0.01 alpha error levels. Data Source: Midsouth and Southeast 2017-2019 – all data sources: TechDev and Breeding PCM4, NPE, and University.						

DP 2020 B3XF was compared to DP 1646 B2XF in testing conducted in Texas regions. DP 2020 B3XF showed improvements over DP 1646 B2XF in uniformity (increase of 0.10) (Table 4). DP 2020 B2XF had similar yield and fiber strength when compared to DP 1646 B2XF (Table 4).

Table 4. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 2020 B3XF and DP 1646 B2XF in Texas regions 2018-2019.

Variety	Lint Yield (lb/acre)	Lint %	Fiber Length	Micronaire	Fiber Strength (g/tex)	Uniformity Index
DP 2020 B3XF	1,367	40.4	1.18	4.26	30.3	82.6
DP 1646 B2XF	1,380	42.1	1.21	4.38	30.5	82.5
Significance		**	**	**		
Observations	83	93	81	81	81	81
Years	2	2	2	2	2	2
% Wins	48	19	17	65	43	56
Significance levels denoted by + = 0.1; * = 0.05; ** = 0.01 alpha error levels. Data Source: Texas region 2018-2019 – all data sources: TechDev and Breeding PCM4, NPE, and University.						

DP 2038 B3XF

DP 2038 B3XF is a mid-maturing cotton variety with excellent yield potential that is adapted to the Midsouth, Southeast, and Texas regions. DP 2038 B3XF has smooth leaf pubescence and is resistant to bacterial blight. DP 2038 B3XF responds well to high yield environments with high turnout. DP 2038 B3XF requires early PGR management in most environments.

DP 2038 B3XF Yield and Fiber Quality

DP 2038 B3XF was compared to DP 1646 B2XF in testing conducted in Midsouth and Southeast regions. DP 2038 B3XF showed improvements over DP 1646 B2XF in lint yield (increase of 62 lbs lint/acre), lint % (increase of 2.5%), micronaire (increase of 0.11), and fiber strength (increase of 1 g/tex) (Table 5).

Table 5. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 2038 B3XF and DP 1646 B2XF in Midsouth and Southeast regions 2017-2019.

Variety	Lint Yield (lb/acre)	Lint %	Fiber Length	Micronaire	Fiber Strength (g/tex)	Uniformity Index
DP 2038 B3XF	1,552	44.4	1.13	4.48	29.8	82.2
DP 1646 B2XF	1,460	41.8	1.23	4.36	29.7	83.1
Significance	**	**	**	**		**
Observations	140	148	117	122	122	122
Years	3	3	3	3	3	3
% Wins	69	94	1	29	49	20
Significance levels denoted by + = 0.1; * = 0.05; ** = 0.01 alpha error levels. Data Source: Midsouth and Southeast regions. 2017-2019 – all data sources: TechDev and Breeding PCM4, NPE, and University.						

DP 2038 B3XF was compared to DP 1646 B2XF in testing conducted in Texas regions. DP 2038 B3XF showed improvements over DP 1646 B2XF in lint yield (increase of 60 lbs lint/acre), lint percent (increase of 2.1%), and micronaire (increase of 0.03) (Table 6).

Table 6. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 2038 B3XF and DP 1646 B2XF in Texas regions 2017-2019.

Variety	Lint Yield (lb/acre)	Lint %	Fiber Length	Micronaire	Fiber Strength (g/tex)	Uniformity Index
DP 2038 B3XF	1,450	44.6	1.11	4.37	29.8	81.5
DP 1646 B2XF	1,390	42.6	1.21	4.34	30.3	82.5
Significance	**	**	**		**	**
Observations	105	117	94	99	99	99
Years	3	3	3	3	3	3
% Wins	67	96	0	42	43	16
Significance levels denoted by + = 0.1; * = 0.05; ** = 0.01 alpha error levels. Data Source: Texas regions. 2017-2019 – all data sources: TechDev and Breeding PCM4, NPE, and University.						

DP 2055 B3XF

DP 2055 B3XF is a full-season maturity cotton variety with excellent fiber length that is adapted to the Midsouth, Southeast, and Texas regions. DP 2055 B3XF has smooth leaf pubescence and is resistant to bacterial blight and moderately susceptible to verticillium. DP 2055 B3XF requires aggressive PGR management in most environments.

DP 2055 B3XF Yield and Fiber Quality

DP 2055 B3XF was compared to DP 1646 B2XF in testing conducted in Midsouth and Southeast regions. DP 2055 B3XF showed improvements over DP 1646 B2XF of fiber strength (increase of 0.8 g/tex) and micronaire (increase of 0.10). DP 2055 B3XF showed similar turnout, fiber length, and uniformity index when compared to DP 1646 B3XF (Table 7).

Table 7. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 2055 B3XF and DP 1646 B2XF in Midsouth and Southeast regions 2018-2019.

Variety	Lint Yield (lb/acre)	Lint %	Fiber Length	Micronaire	Fiber Strength (g/tex)	Uniformity Index
DP 2055 B3XF	1,457	42.2	1.23	4.49	30.7	82.9
DP 1646 B2XF	1,497	42.4	1.24	4.38	29.8	83.1
Significance	*			**	**	*
Observations	130	145	125	126	126	126
Years	2	2	2	2	2	2
% Wins	41	49	42	34	78	43
Significance levels denoted by + = 0.1; * = 0.05; ** = 0.01 alpha error levels. Data Source: Midsouth and Southeast regions. 2018-2019 – all data sources: TechDev and Breeding PCM4, NPE, and University.						

DP 2044 B3XF

DP 2044 B3XF is a full-season maturing cotton variety that is best fit on stress environments: dryland limited water acres. DP 2044 B3XF has semi-smooth leaf pubescence that is resistant to bacterial blight and moderately susceptible to verticillium. DP 2044 B3XF is best adapted to the West Texas region.

DP 2044 B3XF Yield and Fiber Quality

DP 2044 B3XF was compared to DP 1549 B2XF in testing conducted in the Southern Plains, Trans Pecos, and Rolling Plains during 2017-2019. DP 2044 B3XF showed improvements over DP 1549 B2XF in lint yield (increase of 36 lbs lint/acre), lint % (increase of 0.1), fiber length (increase of 0.08 inches), and fiber strength (increase of 1.6 g/tex) (Table 8).

Table 8. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 2044 B3XF and DP 1549 B2XF across the Southern Plains, Trans Pecos, and Rolling Plains region, 2017-2019.

Variety	Lint Yield (lb/acre)	Lint %	Fiber Length	Micronaire	Fiber Strength (g/tex)	Uniformity Index
DP 2044 B3XF	1,571	40.8	1.24	3.55	32.3	80.7
DP 1549 B2XF	1,535	40.6	1.16	3.78	30.7	81.0
Significance			**	+	**	
Observations	16	16	9	12	13	13
Years	3	3	3	3	3	3
% Wins	44	50	89	67	85	38
Significance levels denoted by + = 0.1; * = 0.05; ** = 0.01 alpha error levels. Data Source: Southern Plains, Trans Pecos, and Rolling Plains, 2017-2019 – all data sources: Tech Dev and Breeding PCM4, NPE, and University.						

DP 2022 B3XF

DP 2022 B3XF is an early-mid maturing cotton variety with large seed size and excellent seedling vigor. DP 2022 B3XF has semi-smooth leaf pubescence that is resistant to bacterial blight. DP 2022 B3XF is best adapted to the Northern high plains region.

DP 2022 B3XF Yield and Fiber Quality

DP 2022 B3XF was compared to DP 1820 B2XF in testing conducted West Texas, 2017-2019. DP 2022 B3XF showed

improvements over DP 1820 B2XF reporting lower micronaire ratings (Table 9).

Table 9. Lint yield, lint %, fiber length, micronaire, fiber strength, and uniformity index comparisons of DP 2022 B3XF and DP 1820 B2XF West Texas region 2017-2019.

Variety	Lint Yield (lb/acre)	Lint %	Fiber Length	Micronaire	Fiber Strength (g/tex)	Uniformity Index
DP 2022 B3XF	1,421	36.1	1.15	3.88	29.3	81.8
DP 1820 B2XF	1,516	41.4	1.20	4.30	32.1	82.4
Significance	**	**	**	**	**	**
Observations	45	49	28	32	33	33
Years	3	3	3	3	3	3
% Wins	27	6	4	97	6	29

Significance levels denoted by + = 0.1; * = 0.05; ** = 0.01 alpha error levels.
Data Source: West Texas region 2017-2019 – all data sources: Tech Dev and Breeding PCM4, NPE, and University.

Summary

DP 2012 B3XF, DP 2020 B3XF, DP 2038 B3XF, DP 2044 B3XF, DP 2055 B2XF and DP 2022 B3XF, are Bollgard XtendFlex cotton varieties released for the Deltapine Class of ‘20. These cotton varieties are described for plant characteristics, disease tolerance, fiber quality, yield potential, management recommendations and regional fit.

DP 2012 B3XF is an early-maturing cotton variety with high yield potential It has excellent yield potential, fiber strength and uniformity index. This variety provides resistance to bacterial blight, moderate tolerance to verticillium and is best fit to the to the Midsouth, Southeast, and Texas regions. This product has strong terminal growth and requires PGR management in short season environments.

DP 2020 B3XF is an early to mid-maturing cotton variety with excellent fiber quality and fiber length. This product is best adapted to the Midsouth, Southeast, and Texas regions. DP 2020 B3XF has excellent lint yield, fiber length fiber strength and uniformity index. This product is resistant to bacterial blight and moderately tolerant to verticillium wilt. In short season environments DP 2020 B3XF requires PGR management.

DP 2038 B3XF is a mid-maturing cotton variety with excellent fiber quality that is adapted to the Midsouth, Southeast, and Texas regions. This product has excellent yield potential, lint %, micronaire and fiber strength. This product features smooth leaf pubescence and is resistant to bacterial blight. DP 2038 B3XF responds well to high yield environments with high turnout. DP 2038 B3XF requires early PGR management in most environments.

DP 2055 B3XF is a full-season maturity cotton variety with excellent fiber length that is adapted to the Midsouth, Southeast, and Texas regions. This product features excellent fiber strength and micronaire. DP 2055 B3XF has smooth leaf pubescence and is resistant to bacterial blight and moderately susceptible to verticillium. DP 2055 B3XF requires aggressive PGR management in most environments.

DP 2044 B3XF is a full-season maturing cotton variety that is best fit on stress environment including dryland limited water acres. This product has excellent yield potential, lint %, fiber length, and fiber strength. DP 2044 B3XF has semi-smooth leaf pubescence that is resistant to bacterial blight and moderately susceptible to verticillium. DP 2044 B3XF is best adapted to the West Texas region.

DP 2022 B3XF is an early-mid maturing cotton variety with large seed size and excellent seedling vigor.
DP 2022 B3XF has semi-smooth leaf pubescence that is resistant to bacterial blight. DP 2022 B3XF is best adapted to the Northern high plains region.

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