



**AG RESEARCH**



**2021 Oklahoma  
Replicated Agronomic  
Cotton Evaluation (RACE)  
Trial Report**



## Contributors

**Seth Byrd** • Cotton Extension Specialist

**Bradley Wilson** • Graduate Research Assistant

**Cayden Catlin** • Graduate Research Assistant

**Andrea Althoff** • Graduate Research Assistant

**Aaron Henson** • Tillman Co. Extension Educator

**Josh Bushong** • Northwest Area Agronomist

**Greg Hartman** • Washita and Beckham counties Extension Educator

**Danny Cook** • Roger Mills Co. Extension Educator

**Zack Henderson** • Custer Co. Extension Educator

**Haley Shawhan** • Harmon Co. Extension Educator

**Gary Strickland** • Greer and Jackson Co. Extension Educator and Dryland Cropping  
Systems Specialist

---

# 2021 Season Overview

The majority of Oklahoma's cotton acreage experienced cooler and wetter planting conditions from early May through the end of the dryland planting window in mid-June. While the moisture was favorable for emergence, it did result in delays in early season growth. This caused additional thrips control measures to be employed in many areas, particularly on fields planted to cotton with only a base (fungicide only) seed treatment. The delayed growth also set the stage for maturity concerns throughout the summer. Most areas of western Oklahoma were behind on accumulated heat units from May through August. This, combined with many areas also receiving above-average rainfall during two or three of these months, delayed early season growth, fueled excessive vegetative growth and delayed the onset of the flowering period. This setback in development was evident when checking the node of the first fruiting branch. Generally, we observed that the first fruiting branch was one to two nodes higher, regardless of variety and location, compared to these same values recorded on the same varieties and locations in previous years. The overall delay in maturity was still present as August came to an end, typically a period when the earliest set bolls are beginning to crack, and some natural leaf aging is visibly evident. However, in 2021 the crop entered September with lush green foliage and minimal open bolls (if any) throughout much of the state.

September brought a much-needed change in weather compared to the conditions that persisted throughout the late spring and summer. This was the first month of the season that resulted in above average heat unit accumulation, with areas of western Oklahoma picking up 80 – 100 more heat units than average. A reduction of rainfall also occurred, with most of western Oklahoma getting less than an inch for the month. These warm and dry conditions were perfect for a crop that needed to catch up, and in many areas, harvest aid applications began by the third week in September. While there were still areas of the state that had immature cotton going well into October, generally speaking, the conditions the crop experienced in September were ideal. Harvest began on a large scale in early October. Once it started, there were very few delays due to weather with the crop yielding average to above average with mostly favorable fiber quality. Given the slow growth and maturity concerns that plagued the crop from planting through most of the summer, this was a welcome performance, particularly in a year with such strong prices.

A total of 21 commercial varieties from four seed companies were evaluated across seven locations in the 2021 trials (Table 1). There were a multitude of insect and herbicide traits represented within these varieties, including both two and three gene Bt and all three of the commercially available three gene herbicide traits (Table 2). Seasonal temperature patterns from the southwest and west central regions are illustrated by the monthly heat unit accumulation for 2021 compared to the 13-year average for Altus (Fig. 1) and Weatherford (Fig. 2). Variety performance compared to the trial average (yield deviation) of entries that were included in at least four locations is presented in Table 3. Performance of varieties entered in all southwestern dryland and irrigated trials pooled across locations is presented in Table 4. Since there are variations in variety entries across the various regions of Oklahoma, these tables provide a hint of variety performance stability for areas unrepresented by our current RACE Trial locations. Results from individual locations begin on Table 5. There are two results tables for the irrigated Jackson County trial, one showing all entries and one with an analysis of just the varieties containing the XtendFlex® trait.





**Table 1. Seed company participants and variety abbreviations for entries in 2021 Oklahoma RACE Trials.**

Seed Company	Variety Entries	Abbreviation
<b>Deltapine®</b>	1948 B3XF	DP 1948 B3XF
	2021 B3XF	DP 2021 B3XF
	2020 B3XF	DP 2020 B3XF
	2022 XF	DP 2022 XF
	2038 B3XF	DP 2038 B3XF
	2055 B3XF	DP 2055 B3XF
	2123 B3XF	DP 2123 B3XF
<b>FiberMax®</b>	2398 GLTP	FM 2398 GLTP
<b>NexGen®</b>	4050 XF	NG 4050 XF
	4098 B3XF	NG 4098 B3XF
	4190 B3XF	NG 4190 B3XF
	4936 B3XF	NG 4936 B3XF
	5150 B3XF	NG 5150 B3XF
<b>PhytoGen®</b>	332 W3FE	PHY 332 W3FE
	350 W3FE	PHY 350 W3FE
	400 W3FE	PHY 400 W3FE
	443 W3FE	PHY 443 W3FE
	480 W3FE	PHY 480 W3FE
<b>Stoneville®</b>	499 B3XF	ST 499 B3XF
	4993 B3XF	ST 4993 B3XF
	5600 B2XF	ST 5600 B2XF

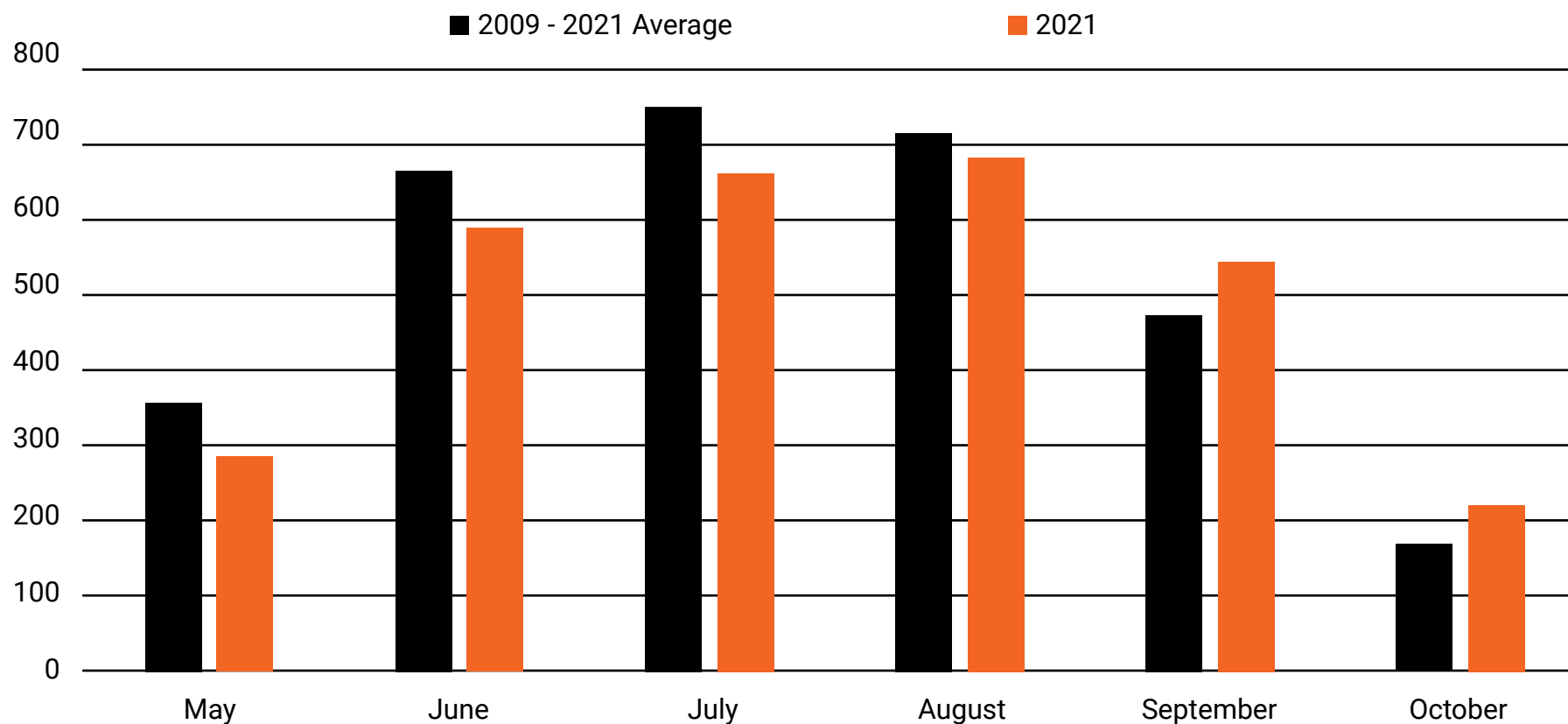
**Table 2. Insect and herbicide trait glossary for 2021 Oklahoma RACE Trial entries.**

Insect Trait	Abbreviation	Bt Proteins
<b>Bollgard 3®</b>	B3	Cry1Ac + Cry2Ab + Vip3A
<b>Twinlink Plus®</b>	TP	Cry1Ab + Cry2Ae + VipAa19
<b>Widestrike 3®</b>	W3	Cry1Ac + Cry1F + Vip3A
Herbicide Trait	Abbreviation	Herbicide Tolerances
<b>Bollgard 3®</b>	FE	Glyphosate + Glufosinate + 2, 4-D
<b>Twinlink Plus®</b>	GL	Glyphosate + Glufosinate
<b>Widestrike 3®</b>	XF	Glyphosate + Glufosinate + Dicamba

The pesticide information presented in this publication was current with federal and state regulations at the time of printing. The user is responsible for determining that the intended use is consistent with the label of the product being used. Use pesticides safely. Read and follow label directions. The information given herein is for educational purposes only. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Cooperative Extension Service is implied. Oklahoma State University, as an equal opportunity employer, complies with all applicable federal and state laws regarding non-discrimination and affirmative action. Oklahoma State University is committed to a policy of equal opportunity for all individuals and does not discriminate based on race, religion, age, sex, color, national origin, marital status, sexual orientation, gender identity/expression, disability, or veteran status with regard to employment, educational programs and activities, and/or admissions. For more information, visit <https://eeo.okstate.edu>. This report of the Oklahoma Agricultural Experiment Station is printed and issued by Oklahoma State University as authorized by the Vice President for Agricultural Programs and has been prepared and distributed at a cost of 20 cents per copy.



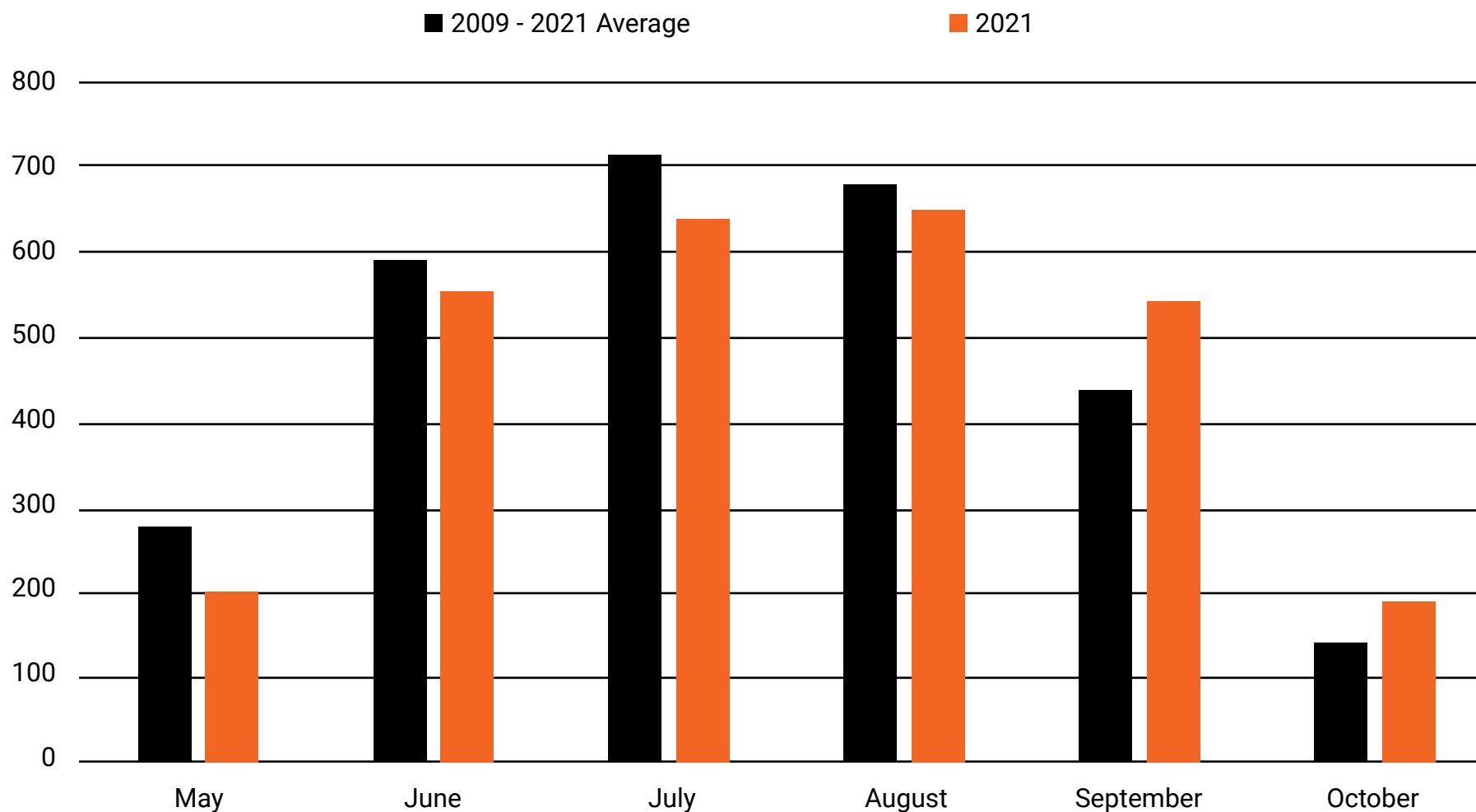
## Altus Monthly Heat Unit Accumulation



**Figure 1. Monthly heat unit accumulation (DD60s) from the Altus Mesonet station.**



## Weatherford Monthly Heat Unit Accumulation



**Figure 2. Monthly heat unit accumulation (DD60s) from the Weatherford Mesonet station.**



**Table 3. 2020 Variety Link Yield Deviation<sup>1</sup> (minimum 4 locations).**

Variety	Greer Dry	Harmon Irr.	Jackson Dry	Jackson Irr.	Tillman Dry	Tillman Irr.	Washita Dry	Average
ST 4993 B3XF	+9.93%	+4.73%	+10.76%	+4.10%	+6.76%	-0.13%	+9.39%	<b>+6.51%</b>
DP 1948 B3XF	+3.58%	-6.68%	+3.57%	-2.80%	-0.43%	+10.02%	+5.70%	<b>+1.85%</b>
ST 5600 B2XF	-6.12%		-6.61%		+14.15%		+4.52%	<b>+1.49%</b>
NG 4098 B3XF	+16.24%	-7.56%	+5.47%	-7.89%	-5.35%	+1.54%	+2.52%	<b>+0.71%</b>
NG 5150 B3XF	+0.96%	+2.00%	-4.33%	-1.96%	-3.60%	-3.41%	+0.11%	<b>-1.46%</b>
NG 4190 B3XF	-4.51%	-12.19%	+0.02%	-4.40%	+0.36%	+8.72%	-1.30%	<b>-1.90%</b>
NG 4050 XF	-7.12%		+1.38%		-1.37%		-4.13%	<b>-2.81%</b>
DP 2022 XF	-4.36%		-10.43%		-12.40%		-1.12%	<b>-7.08%</b>
Avg. (lbs. acre <sup>-1</sup> ) <sup>2</sup>	760	1,295	574	1,498	886	1,002	1,011	

<sup>1</sup>Percent yield increase or decrease compared to the trial average.

<sup>2</sup>Average lint yield of each location in lbs. per acre.

**Table 4. Performance of varieties pooled across dryland and irrigated locations in southwestern Oklahoma.**

Pooled Variety Performance - Dryland <sup>1</sup>			Pooled Variety Performance - Irrigated <sup>2</sup>		
Variety	Lint Yield (lbs./acre <sup>1</sup> )	Loan Value (cents/lb. <sup>-1</sup> )	Variety	Lint Yield (lbs./acre <sup>1</sup> )	Loan Value (cents/lb. <sup>-1</sup> )
ST 4993 B3XF	806 a	52.82 a	ST 4990 B3XF	1,336	51.67
NG 4098 B3XF	776 a	54.19 a	ST 4993 B3XF	1,306	51.89
DP 2012 B3XF	764 a	53.37 a	DP 2020 B3XF	1,262	50.68
DP 1948 B3XF	755 ab	53.50 ab	DP 1948 B3XF	1,256	49.22
ST 5600 B2XF	754 ab	53.31 ab	NG 5150 B3XF	1,253	51.56
NG 4190 B3XF	730 ab	53.02 ab	NG 4190 B3XF	1,220	50.15
NG 5150 B3XF	724 ab	52.93 ab	NG 4936 B3XF	1,215	51.25
NG 4050 B3XF	721 ab	51.73 ab	DP 2038 B3XF	1,211	49.48
DP 2022 XF	672 b	50.50 b	NG 4098 B3XF	1,198	49.59
NG 4936 B3XF	666 b	53.33 b			

<sup>1</sup>Includes data from trials in Greer, Jackson and Tillman counties.

<sup>2</sup>Includes data from trials in Harmon, Jackson and Tillman counties.



**Table 5. 2021 Greer Co. Dryland RACE Trial Results**

Planted: June 10

Seeding Rate: 25,000 40" row spacing

Harvested: October 27 and 29, stripper harvested

Variety	Lint Yield (lbs./acre <sup>1</sup> )		Turnout (%)		Micronaire		Fiber Length (inches)		Uniformity (%)		Fiber Strength (g/tex <sup>1</sup> )		Loan Value <sup>1</sup> (cents/lb. <sup>1</sup> )	Return <sup>2</sup> (\$/acre <sup>1</sup> )
ST 4993 B3XF	883	a	35.83	ab	3.89	bc	1.17	a	81.9	ab	33.5	a	54.38	a
NG 4098 B3XF	835	ab	37.47	a	4.33	a	1.07	d	83.2	a	33.9	a	52.78	a
DP 2012 B3XF	787	bc	35.50	ab	3.82	c	1.13	a-c	81.3	bc	32.4	ab	52.00	a
DP 1948 B3XF	783	bc	35.65	ab	3.78	cd	1.11	b-d	81.2	bc	30.2	cd	53.25	a
ST 5600 B2XF	767	bc	36.02	ab	4.01	a-c	1.11	b-d	81.4	bc	28.8	de	53.13	a
NG 4190 B3XF	727	cd	31.72	c	3.38	d	1.07	d	80.0	c	27.5	e	47.95	b
NG 5150 B3XF	725	cd	35.33	ab	3.79	cd	1.11	b-d	81.2	bc	28.6	de	53.17	a
NG 4050 B3XF	713	cd	33.86	bc	4.30	ab	1.10	b-d	81.4	bc	30.9	bc	53.22	a
DP 2022 XF	706	cd	36.68	a	3.88	c	1.08	cd	81.2	bc	31.2	bc	52.10	a
NG 4936 B3XF	671	d	33.82	bc	3.84	c	1.13	ab	82.2	ab	29.6	cd	53.93	a
Average	760		35.19		3.90		1.11		81.5		30.7		52.59	
p-value	0.0040		0.0037		0.0093		0.0121		0.0766		<0.0001		0.0222	
pLSD	86		2.34		0.42		0.05		1.6		1.7		3.05	
CV	9.71		5.70		8.68		3.40		1.36		7.26		4.40	

<sup>1</sup>Color and leaf grades set to base levels (41 and 4, respectively) due to lack of proper lint cleaner on gin.

<sup>2</sup>Return per acre calculated (lint yield per acre X loan value per pound) - seed cost per acre.





**Table 6. 2021 Harmon Co. Irrigated RACE Trial Results**

Planted: May 3  
Seeding Rate: 40,000 40" row spacing  
Irrigation: Sub-surface drip  
Harvested: October 8, picker harvested

Variety	Lint Yield (lbs./acre <sup>1</sup> )	Turnout (%)	Micronaire	Fiber Length (inches)	Uniformity (%)	Fiber Strength (g/tex <sup>1</sup> )	Loan Value <sup>1</sup> (cents/lb. <sup>1</sup> )	Return <sup>2</sup> (\$/acre <sup>1</sup> )
ST 4990 B3XF	1,543 a	38.87 bc	3.11 ab	1.23 ab	82.3	29.6 a-c	47.13	659 a
ST 4993 B3XF	1,356 b	42.23 a	3.16 a	1.20 bc	83.3	31.6 a	47.60	577 b
NG 4936 B3XF	1,323 bc	38.15 c	2.91 a-c	1.24 ab	82.0	28.4 bc	45.58	535 b-d
DP 2020 B3XF	1,323 bc	38.04 c	2.87 bc	1.20 bc	80.2	28.7 a-c	43.70	510 b-e
NG 5150 B3XF	1,321 bc	40.20 b	3.14 a	1.20 bc	81.2	28.8 a-c	46.50	543 bc
DP 2038 B3XF	1,246 cd	42.87 a	2.77 c	1.17 c	80.4	26.8 c	42.75	465 c-e
DP 1948 B3XF	1,209 de	39.15 bc	2.81 c	1.23 ab	80.3	30.1 ab	44.60	471 c-e
NG 4098 B3XF	1,197 de	38.13 c	2.85 bc	1.25 a	80.4	31.6 a	44.15	459 de
NG 4190 B3XF	1,137 e	39.92 b	2.86 bc	1.21 a-c	82.2	28.2 bc	44.77	439 e
Average	1,295	39.73	2.94	1.21	81.4	29.3	45.2	518
p-value	<0.0001	<0.0001	0.0341	0.0254	0.1432	0.0482	0.2505	0.0004
pLSD	108	1.63	0.27	1.21	NS	2.91	NS	78
CV	11.67	4.73	6.60	2.69	2.06	7.02	5.53	16.67

<sup>1</sup>Color and leaf grades set to base levels (41 and 4, respectively) due to lack of proper lint cleaner on gin.

<sup>2</sup>Return per acre calculated (lint yield per acre X loan value per pound) - seed cost per acre.



**Table 7. 2021 Jackson Co. Dryland Two Replication Strip Trial Results**

Planted: June 9

Seeding Rate: 20,000 40" row spacing

Harvested: November 11, stripper harvested

Variety	Lint Yield (lbs./acre <sup>1</sup> )	Turnout (%)	Micronaire	Fiber Length (inches)	Uniformity (%)	Fiber Strength (g/tex <sup>1</sup> )	Loan Value <sup>1</sup> (cents/lb.)	Return <sup>2</sup> (\$/acre <sup>1</sup> )
PHY 480 W3FE	642	37.99	4.14	1.07	81.9	28.8	52.10	307
ST 4993 B3XF	636	38.71	4.48	1.07	81.0	30.7	52.20	298
FM 2398 GLTP	619	39.57	4.49	1.08	80.0	29.4	52.70	294
NG 4098 B3XF	606	36.98	4.18	1.12	80.9	32.6	54.05	293
PHY 443 W3FE	600	38.20	4.82	1.04	80.6	27.7	48.90	258
DP 1948 B3XF	595	37.49	4.32	1.15	82.5	31.9	54.20	288
PHY 400 W3FE	592	36.57	4.11	1.07	80.3	30.5	52.30	274
NG 4050 XF	582	36.70	4.55	1.04	81.0	28.2	48.90	260
NG 4190 B3XF	574	37.03	4.16	1.05	80.1	28.0	52.10	264
PHY 332 W3FE	554	34.20	4.42	1.07	80.0	30.3	52.20	253
NG 5150 B3XF	549	36.16	4.52	1.10	81.3	28.2	52.65	254
PHY 350 W3FE	542	33.72	4.36	1.06	80.3	27.9	52.00	247
ST 5600 B2XF	536	36.70	4.56	1.08	80.5	30.2	52.85	254
DP 2012 B3XF	534	36.52	4.24	1.10	81.7	26.5	52.75	246
DP 2022 XF	514	32.66	4.05	1.06	78.7	27.3	51.45	232
NG 4936 B3XF	513	35.61	4.44	1.07	81.5	27.3	52.00	232
Average	574	36.55	4.37	1.08	80.8	29.1	52.08	266

<sup>1</sup>Color and leaf grades set to base levels (41 and 4, respectively) due to lack of proper lint cleaner on gin.

<sup>2</sup>Return per acre calculated (lint yield per acre X loan value per pound) - seed cost per acre.



**Table 8. 2021 Jackson Co. Irrigated RACE Trial Results**

Planted: May 21

Seeding Rate: 42,000 38" row spacing

Irrigation: Sub-surface drip located on 72" spacing in furrow

Harvested: October 18, picker harvested

Variety	Lint Yield (lbs./acre <sup>1</sup> )	Turnout (%)	Micronaire	Fiber Length (inches)	Uniformity (%)	Fiber Strength (g/tex <sup>1</sup> )	Loan Value <sup>1</sup> (cents/lb. <sup>1</sup> )	Return <sup>2</sup> (\$/acre <sup>1</sup> )
PHY 332 W3FE	1,618 a	40.75 e-g	3.81 c-f	1.21 b-d	82.8 ab	33.9 ab	54.40 a	806 a
PHY 350 W3FE	1,594 a	40.44 fg	3.89 c-e	1.20 cd	82.9 ab	31.6 cd	54.37 a	793 ab
PHY 443 W3FE	1,580 a	41.09 d-g	3.82 c-f	1.18 de	84.0 a	33.6 ab	54.47 a	786 ab
FM 2398 GLTP	1,576 a	43.00 a-c	4.58 a	1.21 cd	83.5 a	30.7 d-f	54.12 a	784 ab
PHY 400 W3FE	1,561 ab	42.37 b-e	3.82 c-f	1.16 e	82.3 a-c	31.6 cd	52.52 ab	747 a-c
ST 4993 B3XF	1,559 a-c	44.60 a	4.54 a	1.15 e	84.1 a	33.7 ab	54.27 a	775 ab
ST 4990 B3XF	1,513 a-d	40.47 fg	4.34 ab	1.23 bc	83.6 a	29.9 f	54.10 a	747 a-c
NG 5150 B3XF	1,469 b-e	42.10 c-f	4.19 a-c	1.20 cd	82.6 ab	31.4 c-f	54.37 a	724 bc
DP 1948 B3XF	1,456 b-e	41.04 d-g	3.30 g	1.27 a	82.3 a-c	32.3 bc	48.77 c	639 de
DP 2020 B3XF	1,455 c-e	41.36 c-g	4.00 b-d	1.22 b-d	83.9 a	31.5 c-e	54.37 a	716 b-d
PHY 480 W3FE	1,450 de	40.80 e-g	3.40 g	1.20 cd	84.1 a	31.4 c-f	50.42 bc	675 c-e
NG 4190 B3XF	1,432 de	42.59 b-d	3.50 e-g	1.21 cd	83.0 ab	30.0 ef	51.87 ab	668 c-e
DP 2038 B3XF	1,423 de	43.86 ab	3.62 d-g	1.09 f	80.6 c	31.3 c-f	52.93 ab	684 c-e
NG 4936 B3XF	1,403 e	39.81 g	3.92 cd	1.21 cd	83.0 ab	30.0 ef	54.07 a	686 c-e
NG 4098 B3XF	1,380 e	40.23 g	3.42 fg	1.25 ab	81.6 bc	34.5 a	50.45 bc	625 e
Average	1,498	41.63	3.88	1.20	82.95	31.80	53.03	724
p-value	0.0003	<0.0001	<0.0001	<0.0001	0.0275	<0.0001	0.0057	0.0004
pLSD	105	1.71	0.41	0.04	1.88	31.8	3.05	81
CV	6.13	3.87	11.54	3.94	1.62	5.19	4.42	9.64

<sup>1</sup>Color and leaf grades set to base levels (41 and 4, respectively) due to lack of proper lint cleaner on gin.

<sup>2</sup>Return per acre calculated (lint yield per acre X loan value per pound) - seed cost per acre.



**Table 9. 2021 Jackson Co. Irrigated RACE Trial Results - Only XtendFlex® Varieties**

Planted: May 21

Seeding Rate: 42,000 38" row spacing

Irrigation: Sub-surface drip located on 72" spacing in furrow

Harvested: October 18, picker harvested

Variety	Lint Yield (lbs./acre <sup>1</sup> )	Turnout (%)	Micronaire	Fiber Length (inches)	Uniformity (%)	Fiber Strength (g/tex <sup>1</sup> )	Loan Value <sup>1</sup> (cents/lb. <sup>1</sup> )	Return <sup>2</sup> (\$/acre <sup>1</sup> )
ST 4993 B3XF	1,559 a	44.60 a	4.54 a	1.15 d	84.1 a	33.7 ab	54.27 a	775 a
ST 4990 B3XF	1,513 ab	40.47 ef	4.34 ab	1.23 bc	83.6 a	29.9 e	54.10 a	747 ab
NG 5150 B3XF	1,469 bc	42.10 cd	4.19 ab	1.20 c	82.6 ab	31.4 cd	54.37 a	724 a-c
DP 1948 B3XF	1,456 bc	41.04 d-f	3.30 e	1.27 a	82.3 a-c	32.3 bc	48.77 c	639 d
DP 2020 B3XF	1,455 bc	41.36 c-e	4.00 bc	1.22 bc	83.9 a	31.5 c	54.37 a	716 a-c
NG 4190 B3XF	1,432 cd	42.59 bc	3.50 de	1.21 c	83.0 ab	30.0 e	51.87 a-c	668 cd
DP 2038 B3XF	1,423 cd	43.86 ab	3.62 c-e	1.09 e	80.6 c	31.1 c-e	52.93 ab	684 b-d
NG 4936 B3XF	1,403 cd	39.81 f	3.92 b-d	1.21 c	83.0 ab	30.0 de	54.07 a	686 b-d
NG 4098 B3XF	1,380 d	40.23 ef	3.42 e	1.25 ab	81.6 bc	34.5 a	50.45 bc	625 d
Average	1,455	41.79	3.87	1.20	82.8	31.6	52.80	696
p-value	0.0028	<0.0001	0.0001	<0.0001	0.0255	<0.0001	0.0134	0.0023
pLSD	73	1.33	0.43	0.04	1.9	1.4	3.19	64
CV	4.38	4.15	12.22	4.63	1.76	5.54	4.70	8.12

<sup>1</sup>Color and leaf grades set to base levels (41 and 4, respectively) due to lack of proper lint cleaner on gin.

<sup>2</sup>Return per acre calculated (lint yield per acre X loan value per pound) - seed cost per acre.



**Table 10. 2021 Tillman Co. Dryland RACE Trial Results**

Planted: June 18

Seeding Rate: 25,000 40" row spacing

Harvested: November 27, picker harvested

Variety	Lint Yield (lbs./acre <sup>1</sup> )		Turnout (%)		Micronaire		Fiber Length (inches)		Uniformity (%)	Fiber Strength (g/tex <sup>1</sup> )		Loan Value <sup>1</sup> (cents/lb. <sup>1</sup> )	Return <sup>2</sup> (\$/acre <sup>1</sup> )
ST 5600 B2XF	1,012	a	43.09	b	4.51	a	1.12	de	82.0	30.6	cd	53.87	508 a
DP 2012 B3XF	974	ab	42.31	b	4.05	b	1.15	bc	83.2	30.3	d	54.12	483 ab
ST 4993 B3XF	946	a-c	45.03	a	4.46	a	1.10	e	82.5	33.8	a	52.48	463 a-c
NG 4190 B3XF	889	b-d	42.82	b	3.72	de	1.13	c-e	81.7	29.8	d	53.80	434 b-d
DP 1948 B3XF	882	b-d	42.65	b	3.89	b-d	1.18	ab	81.8	32.0	bc	54.30	437 b-d
NG 4050 XF	874	b-e	42.47	b	4.03	bc	1.14	cd	82.7	30.8	cd	54.18	443 b-d
NG 5150 B3XF	854	c-e	42.87	b	3.94	b-d	1.11	de	80.6	28.0	e	53.02	409 c-e
NG 4098 B3XF	839	de	41.78	b	3.79	c-e	1.18	a	80.6	32.9	ab	54.15	411 c-e
NG 4936 B3XF	815	de	40.16	c	4.02	bc	1.15	a-c	82.4	30.3	d	54.05	397 de
DP 2022 XF	776	e	37.74	d	3.65	e	1.14	cd	81.4	29.4	de	52.10	365 e
Average	886		42.09		4.01		1.14		81.9	30.8		53.71	435
p-value	0.0042		<0.0001		<0.0001		0.0005		0.2174	<0.0001		0.2446	0.0053
pLSD	104		1.50		0.24		0.03		NS	1.67		NS	62
CV	10.33		4.88		7.52		2.63		1.60	6.02		1.96	12.24

<sup>1</sup>Color and leaf grades set to base levels (41 and 4, respectively) due to lack of proper lint cleaner on gin.

<sup>2</sup>Return per acre calculated (lint yield per acre X loan value per pound) - seed cost per acre.



**Table 11. 2021 Tillman Co. Irrigated RACE Trial Results**

Planted: May 26

Seeding Rate: 40,000 40" row spacing

Irrigation: Center Pivot

Harvested: October 31, picker harvested

Variety	Lint Yield (lbs./acre <sup>1</sup> )		Turnout (%)		Micronaire		Fiber Length (inches)		Uniformity (%)	Fiber Strength (g/tex <sup>1</sup> )		Loan Value <sup>1</sup> (cents/lb. <sup>1</sup> )	Return <sup>2</sup> (\$/acre <sup>1</sup> )
DP 1948 B3XF	1,103	a	43.68	c	3.93	b	1.20	a	82.4	31.2	b	54.30	531 a
NG 4190 B3XF	1,090	a	44.22	c	4.05	b	1.16	b-d	81.9	28.8	c	53.82	516 ab
NG 4098 B3XF	1,018	b	41.24	e	3.93	b	1.19	ab	81.8	34.1	a	54.18	483 bc
DP 2020 B3XF	1,008	b	41.84	de	4.19	ab	1.17	a-c	82.1	29.6	bc	53.98	472 cd
ST 4993 B3XF	1,001	b	45.51	b	4.61	a	1.10	e	83.1	34.4	a	53.80	471 cd
NG 5150 B3XF	968	bc	44.24	c	4.66	a	1.12	de	81.9	30.0	bc	53.80	450 c-e
DP 2038 B3XF	964	bc	47.17	a	4.35	ab	1.09	e	80.6	29.4	bc	52.77	442 de
ST 4990 B3XF	951	bc	42.43	d	4.27	ab	1.15	cd	81.6	29.1	c	53.78	443 de
NG 4936 B3XF	919	c	41.35	e	4.08	b	1.18	a-c	82.4	30.4	bc	54.10	428 e
Average	1,002		43.52		4.23		1.15		82	30.8		53.84	471
p-value	0.0004		<0.0001		0.0488		<0.0001		0.6114	<0.0001		0.0387	0.0002
pLSD	67		1.01		0.50		0.04		NS	1.9		0.80	37
CV	9.09		4.57		8.35		3.61		1.61	7.14		1.09	10.61

<sup>1</sup>Color and leaf grades set to base levels (41 and 4, respectively) due to lack of proper lint cleaner on gin.

<sup>2</sup>Return per acre calculated (lint yield per acre X loan value per pound) - seed cost per acre.





**Table 12. 2021 Washita Co. Dryland RACE Trial Results**

Planted: June 5

Seeding Rate: 28,000 40" row spacing

Harvested: November 29, stripper harvested

Variety	Lint Yield (lbs./acre <sup>1</sup> )	Turnout <sup>1</sup> (%)	Micronaire	Fiber Length (inches)	Uniformity (%)	Fiber Strength (g/tex <sup>1</sup> )	Loan Value <sup>2</sup> (cents/lb. <sup>1</sup> )	Return <sup>3</sup> (\$/acre <sup>1</sup> )
ST 4993 B3XF	1,106 a	43.55 a	4.73 ab	1.10 d	83.1 a	32.3 b	53.43 bc	543 a
DP 1948 B3XF	1,069 ab	41.57 cd	4.47 bc	1.19 ab	82.9 ab	32.2 b	54.23 a	532 ab
ST 5600 B2XF	1,057 a-c	42.82 ab	4.89 a	1.14 cd	83.4 a	32.3 b	54.13 a	531 ab
DP 2123 B3XF	1,041 a-c	37.94 f	4.50 bc	1.11 d	81.6 b-d	30.0 c-e	53.40 bc	518 ab
NG 4098 B3XF	1,036 a-c	39.77 e	4.12 d	1.20 a	82.8 ab	35.4 a	54.47 a	516 ab
NG 5150 B3XF	1,012 b-d	41.92 b-d	4.74 ab	1.11 d	81.2 cd	28.5 c-e	53.27 c	490 bc
DP 2022 XF	1,000 b-d	37.79 f	4.27 cd	1.10 d	80.2 d	28.2 e	52.90 c	482 bc
NG 4190 B3XF	998 b-e	42.35 a-c	4.46 bc	1.13 cd	82.6 a-c	28.4 de	53.42 bc	484 bc
NG 4050 XF	969 c-e	41.46 cd	4.38 cd	1.13 cd	82.2 a-c	30.7 bc	53.97 ab	489 bc
DP 2055 B3XF	925 de	41.07 d	4.50 bc	1.17 a-c	82.8 ab	30.4 b-d	54.02 ab	452 c
NG 4936 B3XF	907 e	39.30 e	4.36 cd	1.14 b-d	82.1 a-c	29.0 c-e	53.92 ab	441 c
Average	1,011	40.87	4.49	1.14	82.3	30.7	53.74	498
p-value	<0.0061	<0.0001	0.001	0.0016	0.0061	<0.0001	0.0009	0.0076
pLSD	92	1.21	0.29	0.05	1.50	2.20	0.63	51
CV	10.18	4.77	5.76	3.76	1.49	7.91	1.06	11.45

<sup>1</sup>Commerical gin turnout values from this field in mid-high 30s. The source of high turnout values from research gin is unknown.

<sup>2</sup>Color and leaf grades set to base levels (41 and 4, respectively) due to lack of proper lint cleaner on gin.

<sup>3</sup>Return per acre calculated (lint yield per acre X loan value per pound) - seed cost per acre.



## Acknowledgements

We would like to thank the Oklahoma cotton producers who serve as cooperators and allow us to use their land, equipment and time to conduct these trials. These trials wouldn't be possible without their cooperation and support. Financial support for these trials was provided by the Cotton Inc. Oklahoma State Support Committee and participating seed companies. We would like to thank Khawar Arain, Brendan Kelly and the staff of the Texas Tech University Fiber and Biopolymer Research Institute for providing fiber classing services for these trials, as well as John Wanjura for providing equipment and assistance for our ginning program. And finally, we would like to thank the Oklahoma Cotton Council for their support of both the cotton agronomy program at Oklahoma State University and the entire Oklahoma cotton industry.

### **Participating Seed Companies**

Americot/NexGen  
Deltapine  
FiberMax/Stoneville  
PhytoGen Cottonseed