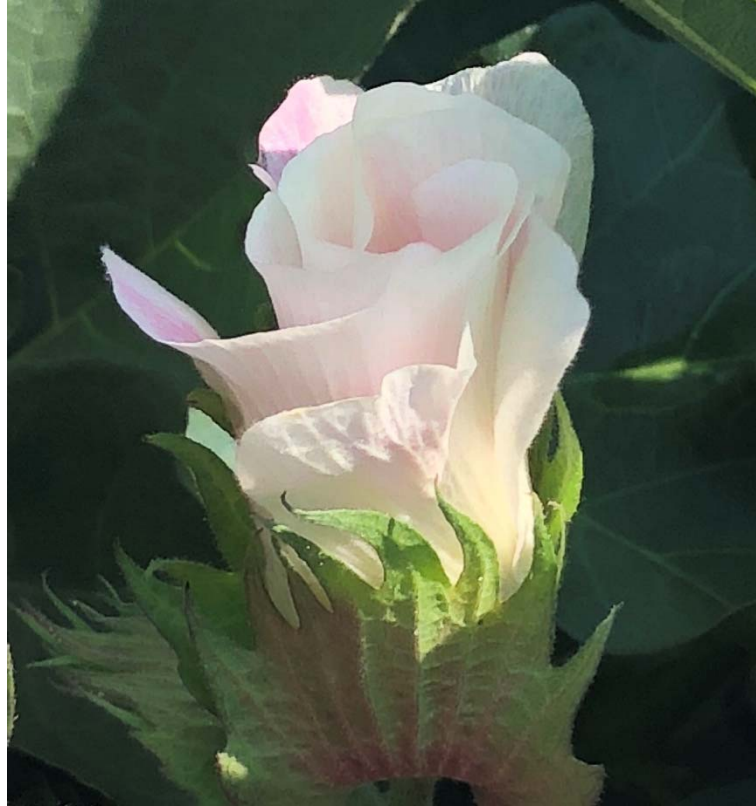




**2018 Texas Panhandle  
Replicated Agronomic Cotton Evaluation (RACE)**



Jourdan Bell, Extension and Research Agronomist – Amarillo  
Kevin Heflin, Program Specialist, Amarillo  
Carla Naylor, Research Associate, Amarillo  
Preston Sirmon, Extension Assistant, Amarillo  
Rick Auckerman, Deaf Smith County Agent  
Marcel Fischbacher, Moore County Agent  
Sergio Mendez, Parmer County Agent  
Curtis Preston, Bailey County Agent  
J.D. Ragland, Randall County Agent  
Kristy Slough, Hutchinson County Agent  
Scott Strawn, Ochiltree County Agent  
JR Sprague, Lipscomb County Agent  
Michael Wilkes, Roberts County Agent  
John Villalba, Swisher County Agent

**2018 Texas Panhandle  
Replicated Agronomic Cotton Evaluation (RACE)**

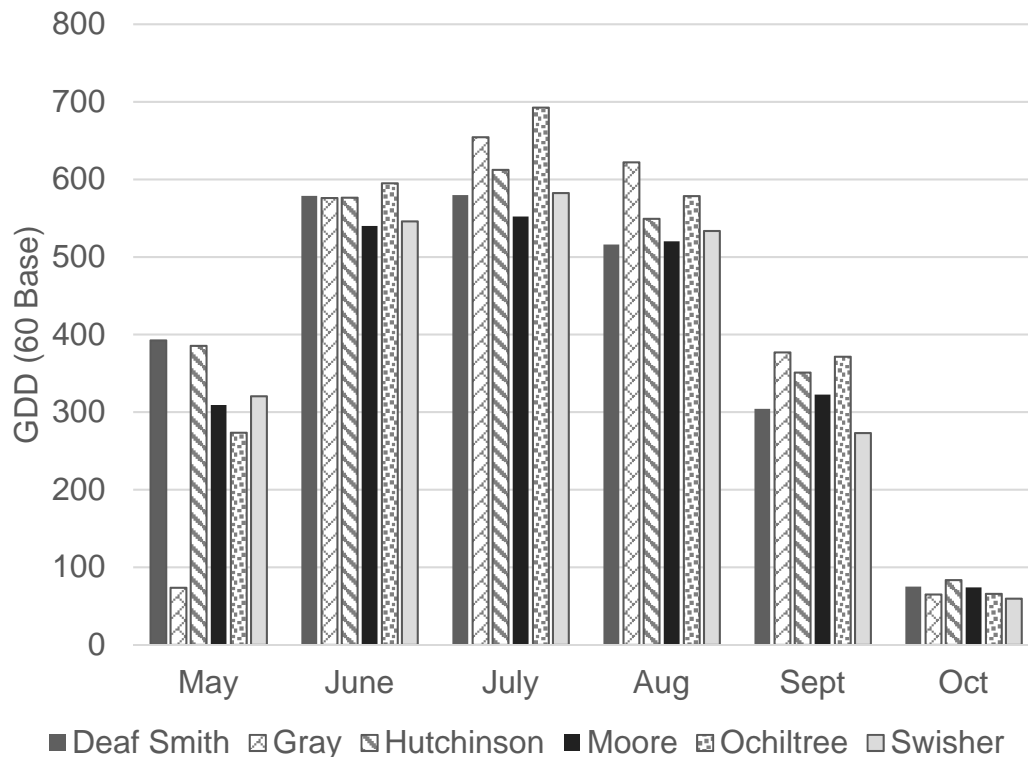
<b>List of Figures</b>	<b>Page</b>
1. Distribution of growing degree days (GDD60) accumulated from planting.....	3
2. 4-week stand counts in the 2018 Hutchison County row spacing trial.....	17
3. Comparison of 2017 and 2018 lint data for the 2018 Hutchinson County row spacing trial.....	18

<b>List of Tables</b>	
1. 2018 Agronomic information by location.....	4
2. 2018 trial condition and in-season details including irrigation, precipitation, Growing Degree Days, and harvest date.....	5
3. Characteristics of varieties evaluated in 2018 Panhandle RACE trials.....	6
4. Four-week post planting stand counts by location.....	7
5. Four-week post planting stand counts as a fraction of the planted population .....	8
6. 2018 Lint yield and quality for the Deaf Smith County Irrigated RACE Trial, Frank Bezner Farm at Hereford, Texas.....	9
7. 2018 Lint yield and quality for the Gray County Dryland RACE Trial, Chandler Bowers Farm at Pampa, Texas.....	10
8. 2018 Lint yield and quality for the Hansford County Dryland RACE Trial, Craig McCloy Farm at Morse, Texas .....	11
9. 2018 Lint yield and quality for the Hutchison County Irrigated RACE Trial, Craig McCloy Farm at Pringle, Texas.....	12
10. 2018 Lint yield and quality for the Moore County Deficit Irrigated RACE Trial, Darren Stallwitz Farm at Dumas, Texas .....	13
11. 2018 Lint yield and quality for the Ochiltree County Irrigated RACE Trial, Brandon Davis Farm at Perryton, Texas.....	14
12. 2018 Lint yield and quality for the Sherman County Irrigated RACE Trial, Tommy Cartrite Farm at Sunray, Texas.....	15
13. 2018 Lint yield and quality for the Swisher County Irrigated RACE Trial, Jeremy Reed Farm at Kress, Texas.....	16
14. 2018 Hutchinson County row spacing lint yield and fiber quality.....	17
15. 2018 Hutchinson County row spacing lint yield and fiber quality by row spacing....	20
16. 2018 Hutchinson County seeding rate trial lint yield and fiber data .....	21

## 2018 Texas Panhandle Highlights

The Texas Panhandle RACE trials provide producers knowledge of varietal performance and stability under regional environmental conditions. The 2018 production season brought many weather-related challenges. In the southern and southwestern Panhandle, dry planting conditions and above average early season temperatures resulted in dryland cotton crop failure across much of the region. In the northeastern Panhandle, early June rain brought much needed moisture, but severe rainfall events resulted in water logging as well as extensive hail damage and crop loss on numerous fields. Regionally, above-average spring temperatures resulted in rapid growing degree day (GDD) accumulation in May (Fig. 1). Hot-dry conditions in late-May and early-June increased crop water demands, but under irrigation, crops were managed for optimum production with irrigated yields exceeding 2000 lbs/ac at many locations.

The 2018 Texas Panhandle RACE Trials were planted at ten locations under varying crop rotations, row spacings and populations (Table 1). Two locations were not taken to harvest (Randall – drought and poor stand; Parmer – extensive volunteer cotton). Eight early to early-mid maturing double and triple herbicide stacked varieties were planted at each location.



**Figure 1.** Distribution of growing degree days (GDD60) accumulated from planting for locations where a Texas A&M AgriLife weather station is located.

**Table 1.** 2018 Agronomic information by location.

County	Location (Nearest Town)	Cooperator	County Agent(s)	Planting Date	Planting Population (Seeds/ac)	Previous Crop	Row Spacing (in)	Air Temp. at Planting (°F)	4" Soil Temp. at Planting (°F)
<b>Deaf Smith</b>	Hereford	Frank Bezner	Rick Auckerman	8-May-18	55,000	Corn	30	60	59
<b>Gray</b>	Pampa	Chandler Bowers	NA	28-May-18	32,000	Grain Sorghum	30	93	85
<b>Hansford</b>	Morse	Craig McCloy	Kristy Slough	21-May-18	36,000	Wheat	40	66	67
<b>Hutchinson</b>	Pringle	Craig McCloy	Kristy Slough	8-May-18	80,000	Cotton w/ wheat cover	20	72	67
<b>Moore</b>	Dumas	Stallwitz Farm	Marcel Fischbacher	15-May-18	60,000	Grain Sorghum	30	81	79
<b>Ochiltree</b>	Perryton	Davis Farm	Strawn, Sprague, and Wilkes	15-May-18	50,000	Corn	30	68	68
<b>Parmer</b>	Farwell	Williams Farm	C. Preston and S. Mendez	7-May-18	40,000	Cotton	30	75	63
<b>Randall</b>	Umbarger	Danny Hicks	J.D. Ragland	30-May-18	35,000	Wheat	30	81	76
<b>Sherman</b>	Sunray	Tommy Carrite	Marcel Fischbacher	10-May-18	65,000	Corn	30	77	66
<b>Swisher</b>	Kress	Jeremy Reed	John Vilalba	11-May-18	50,000	Grain Sorghum	40	72	68

**Table 2.** 2018 trial condition and in-season details including irrigation, precipitation, Growing Degree Days, and harvest date.

<b>County</b>	<b>Trial Condition/Issue</b>	<b>Irrigation (inches)</b>	<b>In-season Precipitation (inches)*</b>	<b>Growing Degree Days</b>	<b>Harvest Date</b>
<b>Deaf Smith</b>	Good	8	13	2446	10-Dec-18
<b>Gray</b>	Dicamba Drift	Dryland	12	2368	1-Dec-18
<b>Hansford</b>	Field water logged in June	Dryland	16	2354	20-Nov-18
<b>Hutchinson</b>	Good	12	16	2558	29-Oct-18
<b>Moore</b>	Good	6.5	9	2237	3-Nov-18
<b>Ochiltree</b>	Good	9	18	2577	28-Nov-18
<b>Parmer</b>	Not Harvested - Heavy Volunteer	---	---	---	---
<b>Randall</b>	Terminated	Dryland	---	---	---
<b>Sherman</b>	Good	12	16	2322	29-Nov-18
<b>Swisher</b>	Good - Hail in July	not available	11	2315	26-Nov-18

\* Across the Texas Panhandle, approximately 5 inches of rainfall (+/- 2.5 inches) was received after October 1. Heavy precipitation in October resulted in harvest delays and quality concerns. Regionally, precipitation after October 1 did not contribute to lint productivity.

**Table 3.** Characteristics of varieties evaluated in 2018 Panhandle RACE trials.

Variety	Maturity	Herbicide Package	Leaf Type	Storm Tolerance*	Plant Height	Mic	Vert.	Bacterial Blight
Deltapine 1522B2XF	Early-Med	Glyphos., Glufos., and Dicamba	Light Hair	5	Medium	4.3	Poor	Susceptible
Deltapine 1612B2XF	Early	Glyphos., Glufos., and Dicamba	Light Hair	6	Medium	4.3	Good	Mod. Susc.
Deltapine 1820B3XF	Early-Med	Glyphos., Glufos., and Dicamba	Semi-Smooth	3.5	Med-Tall	4.1	Moderate	Resistant
Stoneville 4747GLB2	Early-Med	Glyphosate and Glufosinate	Semi-Smooth	7	Short	4.2	Intermediate	Susceptible
FiberMax 1320GL	Very Early	Glyphosate and Glufosinate	Semi-Smooth	7	Short	3.9	Fair	Partial Susc.
FiberMax 1888GLB2	Early-Med	Glyphosate and Glufosinate	Semi-Smooth	7	Medium	3.9	Fair	Resistant
FiberMax 2011GT†	Early	Glyphosate and Glufosinate	Semi-Smooth	8	Short	3.9	Very Good	Resistant
FiberMax 2322GL†	Med	Glyphosate and Glufosinate	Semi-Smooth	6	Med-Tall	4	Excellent	Susceptible
NexGen 3406B2XF	Early-Med	Glyphos., Glufos., and Dicamba	Semi-Smooth	6	Medium	4.4	Intermediate	Susceptible
NexGen 3500B2XF	Early-Med	Glyphos., Glufos., and Dicamba	Smooth	6	Med-Tall	3.8	Excellent	Resistant
NexGen 3517B2XF	Early-Med	Glyphos., Glufos., and Dicamba	Smooth	6	Med-Tall	4.3	Tolerant	Mod. Susc.
NexGen 3780B2XF	Early-Med	Glyphos., Glufos., and Dicamba	Smooth	6	Med-Tall	4.3	Tolerant	Susceptible

\*Storm Tolerance (1-9): 1=Loose Boll, 9=Tight Boll from Company Variety Descriptions.

†Variety included at the producer's request.

**Table 4.** Four-week post planting stand counts by location.

	<b>Deaf Smith</b>	<b>Gray</b>	<b>Hansford</b>	<b>Hutchinson</b>	<b>Moore</b>	<b>Ochiltree</b>	<b>Parmer</b>	<b>Sherman</b>	<b>Swisher</b>
	----plants/acre----								
<b>Planted Pop.</b>	<b>55,000</b>	<b>32,000</b>	<b>36,000</b>	<b>80,000</b>	<b>60,000</b>	<b>50,000</b>	<b>40,000</b>	<b>65,000</b>	<b>50,000</b>
DP 1522 B2XF	----*	14665	24720	----	31363	----	----	----	19275
DP 1612 B2XF	37171	20764	22325	66211	35138	39494	22651	55902	28314
DP 1820 B3XF	27443	18150	----	60984	----	37752	18150	50239	25483
FM 1320 GL	22651	19892	12850	56846	32815	33977	16988	42253	----
FM 1888 GL	23522	16553	17642	55757	30492	33541	18150	43415	----
NG 3406 B2XF	29476	18731	17860	57935	36736	35429	21054	48932	22433
NG 3500 XF	----	17714	19166	----	31218	----	----	----	19602
NG 3517 B2XF	27152	----	----	52054	----	35429	17134	50094	21562
NG 3780 B2XF	29621	20328	17533	55975	31508	33541	17424	41527	25156
ST 4747 GLB2	30056	18440	17315	57281	32525	34993	19021	44286	23522
<b>Trial Average</b>	<b>28387</b>	<b>18360</b>	<b>18676</b>	<b>57880</b>	<b>32724</b>	<b>35520</b>	<b>18822</b>	<b>47081</b>	<b>23168</b>
CV, %	11.30	23.10	22.85	8.01	18.83	9.39	23.08	7.08	16.85
p-value	0.0038	0.7557	0.2914	0.0656	0.9082	0.2086	0.7838	0.0007	0.0482
LSD	5619	ns	ns	8020	10666	5775	ns	5657	6205

\* Varieties not planted at the respective location.

**Table 5.** Four-week post planting stand counts by location as a fraction of the planted population.

	<b>Deaf Smith</b>	<b>Gray</b>	<b>Hansford</b>	<b>Hutchinson</b>	<b>Moore</b>	<b>Ochiltree</b>	<b>Parmer</b>	<b>Sherman</b>	<b>Swisher</b>	
	----plants/acre----									<b>Variety</b>
<b>Planted Pop.</b>	<b>55,000</b>	<b>32,000</b>	<b>36,000</b>	<b>80,000</b>	<b>60,000</b>	<b>50,000</b>	<b>40,000</b>	<b>65,000</b>	<b>50,000</b>	<b>Average</b>
DP 1522 B2XF	----*	0.46	0.69	----	0.52	----	----	----	0.39	0.51
DP 1612 B2XF	0.68	0.65	0.62	0.83	0.59	0.79	0.57	0.86	0.57	0.68
DP 1820 B3XF	0.50	0.57	----	0.76	----	0.76	0.45	0.77	0.51	0.62
FM 1320 GL	0.41	0.62	0.36	0.71	0.55	0.68	0.42	0.65	----	0.55
FM 1888 GL	0.43	0.52	0.49	0.70	0.51	0.67	0.45	0.67	----	0.55
FM 2011 GT	----	----	----	----	----	----	----	0.75	----	0.75
FM 2322 GL	----	----	----	----	----	----	----	----	0.39	0.39
NG 3406 B2XF	0.54	0.59	0.50	0.72	0.61	0.71	0.53	0.75	0.45	0.60
NG 3500 XF	----	0.55	0.53	----	0.52	----	----	----	0.39	0.50
NG 3517 B2XF	0.49	----	----	0.65	----	0.71	0.43	0.77	0.43	0.58
NG 3780 B2XF	0.54	0.64	0.49	0.70	0.53	0.67	0.44	0.64	0.50	0.57
ST 4747 GLB2	0.55	0.58	0.48	0.72	0.54	0.70	0.48	0.68	0.47	0.58
<b>Trial Average</b>	<b>0.52</b>	<b>0.57</b>	<b>0.52</b>	<b>0.72</b>	<b>0.55</b>	<b>0.71</b>	<b>0.47</b>	<b>0.73</b>	<b>0.46</b>	<b>0.57</b>

\* Varieties not planted at the respective location.



**Table 6.** 2018 Lint yield and quality for the Deaf Smith County RACE Trial, Frank Bezner Farm at Hereford, Texas (Rick Auckerman County Extension Agent). The reported lint value is an average of the calculated lint values of all three replications.

Variety	Lint Yield --- lb/acre ---	Seed Yield --- lb/acre ---	Turnout --%--	Micro- naire	Fiber Length (in.)	Strength (g/tex)	Uniformity --%--	Lint loan Value cents/lb	Lint Value --- \$/acre ---
ST 4747 GLB2	2366 a	4078 a	0.32 abc	3.4	1.19	29.2	81.1	48.28	1141.32
DP 1820 B3XF	2329 ab	3601 a	0.35 a	2.9	1.24	31.7	81.5	44.20	1030.49
FM 1888 GL	2201 abc	3703 a	0.33 ab	3.2	1.20	31.2	81.0	49.18	1082.10
DP 1612 B2XF	2132 abc	3806 a	0.32 abc	3.1	1.19	30.9	81.7	47.83	1019.81
FM 1320 GL	2011 abc	3790 a	0.31 bc	3.0	1.14	30.2	80.0	46.13	927.86
NG 3780 B2XF	1861 bc	3438 a	0.31 bc	3.1	1.17	31.4	79.6	49.10	914.69
NG 3406 B2XF	1841 c	3393 a	0.31 bc	2.6	1.14	27.8	80.2	44.08	817.41
NG 3517 B2XF	1756 c	3453 a	0.30 c	2.8	1.16	30.4	79.6	44.58	782.87
<b>Test average</b>	<b>2062</b>	<b>3658</b>	<b>0.32</b>	<b>2.99</b>	<b>1.18</b>	<b>30.33</b>	<b>80.57</b>	<b>46.67</b>	<b>964.57</b>
CV, %	5.92	5.20	2.58	8.04	1.10	1.91	0.98	5.95	10.03
Std. Dev.	240.30	264.80	0.02	0.27	0.03	1.32	0.99	2.93	140.65
p-value	0.0063	0.0727	0.0058	0.0699	0.0008	0.0021	0.1496	0.3787	0.0543
LSD	482.7	ns	0.0328	ns	0.0514	2.2967	ns	ns	ns

Means within a column with the same letter are not significantly different at the 0.05 probability level.

CV - coefficient of variation.

Value for lint based on CCC loan value from grab samples and FBRI HVI results.

Lint loan value calculated from the 2018 Upland Cotton Loan Valuation Model from Cotton Incorporated using a \$0.52/pound base.

NG=NexGen, FM=FiberMax, ST=Stoneville, DP=DeltaPine

**Table 7.** 2018 Lint yield and quality for the Gray County Dryland RACE Trial, Chandler Bowers Farm at Pampa, Texas. The reported lint value is an average of the calculated lint values of all three replications.

Variety	Lint Yield --- lb/acre ---	Seed Yield --- lb/acre ---	Turnout --%--	Micro- naire	Fiber Length (in.)	Strength (g/tex)	Uniformity --%--	Lint loan Value cents/lb	Lint Value --- \$/acre ---
DP 1612 B2XF	970 a	1363 a	0.33 bc	3.9	1.14	30.0	81.0	49.89	532.26
NG 3406 B2XF	960 a	1320 ab	0.34 ab	3.6	1.12	29.2	81.1	50.63	520.35
DP 1522 B2XF	941 a	1274 ab	0.34 ab	3.7	1.14	30.1	80.7	51.05	494.95
DP 1820 B3XF*	933 a	1158 b	0.35 a	3.6	1.16	30.7	80.6	51.67	490.22
NG 3500 XF	919 a	1275 ab	0.34 ab	4.3	1.10	30.5	81.9	51.39	486.82
NG 3780 B2XF	871 a	1328 ab	0.32 c	4.1	1.13	30.4	80.8	54.07	470.94
FM 1320 GL	.	.	.	.	.	.	.	.	.
FM 1888 GL	.	.	.	.	.	.	.	.	.
ST 4747 GLB2	.	.	.	.	.	.	.	.	.
<b>Test average</b>	<b>932</b>	<b>1286</b>	<b>0.34</b>	<b>3.88</b>	<b>1.13</b>	<b>30.14</b>	<b>81.02</b>	<b>51.45</b>	<b>499.26</b>
CV, %	7.89	6.82	2.10	14.70	1.22	2.92	1.24	7.58	9.64
Std. Dev.	73.00	102.18	0.01	0.58	0.02	0.92	0.99	3.70	41.28
p-value	0.4904	0.0582	0.0001	0.3898	0.0004	0.2682	0.4993	0.7462	0.9946
LSD	ns	197.1	0.0159	ns	0.0309	ns	ns	ns	ns

Means within a column with the same letter are not significantly different at the 0.05 probability level.

CV - coefficient of variation.

\*Farmer Entry

Value for lint based on CCC loan value from grab samples and FBRI HVI results.

Lint loan value calculated from the 2018 Upland Cotton Loan Valuation Model from Cotton Incorporated using a \$0.52/pound base.

NG=NexGen, FM=FiberMax, ST=Stoneville, DP=DeltaPine

Non-XtendFlex varieties injured by dicamba drift.

**Table 8.** 2018 Lint yield and quality for the Hansford County Dryland RACE Trial, Craig McCloy Farm at Morse, Texas (Kristy Slough County Extension Agent). The reported lint value is an average of the calculated lint values of all three replications.

Variety	Lint Yield --- lb/acre ---	Seed Yield --- lb/acre ---	Turnout --%--	Micro- naire	Fiber Length (in.)	Strength (g/tex)	Uniformity --%--	Lint loan Value cents/lb	Lint Value --- \$/acre ---
NG 3406 B2XF	437 a	628 a	0.37 ab	3.8	1.02	27.5	78.9	48.48	211.24
FM 1320 GL	429 a	659 a	0.35 bc	3.7	1.00	28.4	77.8	47.55	204.03
FM 1888 GL	419 a	608 a	0.36 abc	3.7	1.03	27.9	78.2	47.48	198.20
NG 3500 XF	400 a	598 a	0.36 abc	4.2	1.01	28.2	79.6	46.20	185.61
DP 1612 B2XF	400 a	595 a	0.36 abc	4.0	1.02	28.1	79.0	45.63	182.98
ST 4747 GLB2	387 a	599 a	0.35 bc	3.9	1.01	25.4	76.5	43.87	170.30
DP 1522 B2XF	385 a	541 a	0.37 a	4.1	1.02	28.0	79.4	47.23	182.23
NG 3780 B2XF	374 a	582 a	0.34 c	3.9	1.00	27.7	77.4	45.10	168.42
<b>Test average</b>	<b>404</b>	<b>601</b>	<b>0.36</b>	<b>3.91</b>	<b>1.01</b>	<b>27.63</b>	<b>78.35</b>	<b>46.44</b>	<b>187.87</b>
CV, %	12.88	13.80	1.98	1.91	1.45	2.35	0.81	3.77	13.50
Std. Dev.	48.40	76.50	0.01	0.17	0.02	1.07	1.15	2.06	25.77
p-value	0.77	0.82	0.0043	<0.0001	0.1612	0.0009	0.0002	0.0821	0.4047
LSD	ns	ns	0.0200	0.21	ns	ns	1.7869	ns	ns

Means within a column with the same letter are not significantly different at the 0.05 probability level.

CV - coefficient of variation.

Value for lint based on CCC loan value from grab samples and FBRI HVI results.

Lint loan value calculated from the 2018 Upland Cotton Loan Valuation Model from Cotton Incorporated using a \$0.52/pound base.

NG=NexGen, FM=FiberMax, ST=Stoneville, DP=DeltaPine

**Table 9.** 2018 Lint yield and quality for the Hutchinson County Irrigated RACE Trial, Craig McCloy Farm at Pringle, Texas (Kristy Slough County Extension Agent). The reported lint value is an average of the calculated lint values of all three replications.

Variety	Lint Yield --- lb/acre ---	Seed Yield --- lb/acre ---	Turnout --%--	Micro- naire	Fiber Length (in.)	Strength (g/tex)	Uniformity --%--	Lint loan Value cents/lb	Lint Value --- \$/acre ---
DP 1820 B3XF	2266 a	3051 a	0.37 a	4.0	1.22	32.7	82.8	50.78	1149.75 a
FM 1888 GL	2046 ab	2952 a	0.35 ab	3.7	1.21	32.6	82.7	50.72	1038.21 ab
FM 1320 GL	1982 bc	2909 a	0.35 ab	3.9	1.13	30.8	80.7	52.10	1033.56 ab
ST 4747 GLB2	1927 bc	3223 a	0.32 cd	3.7	1.17	29.6	79.1	48.35	931.65 bc
NG 3517 B2XF	1833 bcd	3266 a	0.31 d	3.6	1.16	32.6	81.3	50.20	919.61 bc
NG 3780 B2XF	1728 cd	2588 a	0.30 d	3.4	1.18	32.8	80.7	50.12	864.49 c
NG 3406 B2XF	1723 cd	2700 a	0.34 bc	3.3	1.14	30.1	80.7	49.00	843.63 c
DP 1612 B2XF	1630 d	2674 a	0.32 d	3.6	1.17	31.9	81.7	52.62	857.12 c
<b>Test average</b>	<b>1892</b>	<b>2920</b>	<b>0.33</b>	<b>3.66</b>	<b>1.17</b>	<b>31.64</b>	<b>81.22</b>	<b>50.49</b>	<b>954.75</b>
CV, %	4.87	10.81	2.54	4.25	1.77	2.01	1.07	3.65	5.26
Std. Dev.	212.21	357.62	0.02	0.25	0.04	1.32	1.37	2.06	112.17
p-value	<0.0001	0.1308	<0.0001	0.0009	0.0005	<0.0001	0.0016	0.1563	<0.0001
LSD	260.3	ns	0.0238	0.4395	0.0588	1.7944	2.4542	ns	142.07

Means within a column with the same letter are not significantly different at the 0.05 probability level.

CV - coefficient of variation.

Value for lint based on CCC loan value from grab samples and FBRI HVI results.

Lint loan value calculated from the 2018 Upland Cotton Loan Valuation Model from Cotton Incorporated using a \$0.52/pound base.

NG=NexGen, FM=FiberMax, ST=Stoneville, DP=DeltaPine

**Table 10.** 2018 Lint yield and quality for the Moore County Deficit Irrigated RACE Trial, Darren Stallwitz Farm, Dumas, Texas (Marcel Fischbacher County Extension Agent). The reported lint value is an average of the calculated lint values of all three replications.

Variety	Lint Yield		Seed Yield		Turnout	Micro- naire	Fiber Length (in.)	Strength (g/tex)	Uniformity --%--	Lint loan Value cents/lb	Lint Value --- \$/acre ---		
	--- lb/acre ---	a	--- lb/acre ---	a									
DP 1612 B2XF	1203	a	1702	a	0.34	a	4.6	1.14	31.3	82.8	54.27	652.87	a
FM 1888 GL	1116	a	1483	ab	0.34	a	4.6	1.16	31.6	81.8	53.25	591.97	ab
ST 4747 GLB2	1108	a	1627	ab	0.32	a	4.3	1.15	27.9	80.4	48.93	540.64	ab
DP 1522 B2XF	1099	a	1528	ab	0.33	a	4.6	1.14	30.8	82.4	54.53	599.32	ab
NG 3406 B2XF	1075	a	1486	ab	0.34	a	4.5	1.11	29.6	82.9	54.30	584.03	ab
NG 3500 XF	1053	a	1532	ab	0.33	a	4.7	1.11	32.1	82.5	53.70	568.01	ab
NG 3780 B2XF	1028	a	1532	ab	0.32	a	4.7	1.12	30.7	81.4	52.28	536.01	ab
FM 1320 GL	953	a	1339	b	0.34	a	4.6	1.11	31.1	81.5	53.65	511.68	b
<b>Test average</b>	<b>1079</b>		<b>1529</b>		<b>0.33</b>		<b>4.58</b>	<b>1.13</b>	<b>30.63</b>	<b>81.96</b>	<b>53.11</b>	<b>573.07</b>	
CV, %	10.14		7.98		3.54		5.50	1.84	2.40	1.17	2.72	8.32	
Std. Dev.	114.79		144.04		0.01		0.24	0.25	1.40	1.14	2.13	58.10	
p-value	0.3004		0.0597		0.0675		0.7289	0.0626	0.0001	0.0709	0.0044	0.0544	
LSD	ns		344.7		ns		ns	ns	2.0819	ns	4.09	134.81	

Means within a column with the same letter are not significantly different at the 0.05 probability level.

CV - coefficient of variation.

Value for lint based on CCC loan value from grab samples and FBRI HVI results.

Lint loan value calculated from the 2018 Upland Cotton Loan Valuation Model from Cotton Incorporated using a \$0.52/pound base.

NG=NexGen, FM=FiberMax, ST=Stoneville, DP=DeltaPine

**Table 11.** 2018 Lint yield and quality for the Ochiltree County Irrigated RACE Trial, Davis Farm, Perryton, Texas (Scott Strawn and JR Sprague County Extension Agents). The reported lint value is an average of the calculated lint values of all three replications.

Variety	Lint Yield --- lb/acre ---	Seed Yield --- lb/acre ---	Turnout --%--	Micro- naire	Fiber Length (in.)	Strength (g/tex)	Uniformity --%--	Lint loan Value cents/lb	Lint Value --- \$/acre ---
DP 1820 B3XF	2194 a	3275 a	0.37 a	3.4	1.24	32.6	81.8	53.28	1147.33
DP 1612 B2XF	1944 ab	3378 a	0.32 b	3.4	1.18	32.0	82.0	50.58	964.33
ST 4747 GLB2	1929 ab	3490 a	0.32 b	3.5	1.18	28.6	78.7	50.27	963.00
FM 1888 GL	1919 ab	3210 a	0.34 ab	3.3	1.21	32.0	81.8	50.88	957.33
NG 3517 B2XF	1873 b	3476 a	0.32 b	3.2	1.17	32.5	80.9	50.60	929.00
NG 3406 B2XF	1864 b	3152 a	0.34 ab	3.2	1.15	30.2	81.0	51.18	935.67
NG 3780 B2XF	1982 b	3423 a	0.34 b	3.1	1.19	33.7	81.1	49.78	964.00
FM 1320 GL	1777 b	3220 a	0.32 b	3.7	1.15	30.5	81.4	54.17	944.67
<b>Test average</b>	<b>1935</b>	<b>3328</b>	<b>0.33</b>	<b>3.34</b>	<b>1.18</b>	<b>31.50</b>	<b>81.08</b>	<b>51.34</b>	<b>975.67</b>
CV, %	5.63	5.04	3.73	3.49	1.25	3.31	0.97	2.29	9.23
Std. Dev.	153.87	187.43	0.02	0.22	0.03	1.78	1.20	1.77	100.99
p-value	0.0064	0.1537	0.0012	0.0001	<0.0001	0.0005	0.0027	0.0032	0.1461
LSD	303.9	ns	0.0346	0.3295	0.0420	2.9445	2.2251	3.33	ns

Means within a column with the same letter are not significantly different at the 0.05 probability level.

CV - coefficient of variation.

Value for lint based on CCC loan value from grab samples and FBRI HVI results.

Lint loan value calculated from the 2018 Upland Cotton Loan Valuation Model from Cotton Incorporated using a \$0.52/pound base.

NG=NexGen, FM=FiberMax, ST=Stoneville, DP=DeltaPine

**Table 12.** 2018 Lint yield and quality for the Sherman County Irrigated RACE Trial, Tommy Cartrite Farm, Dumas, Texas (Marcel Fischbacher County Extension Agent). The reported lint value is an average of the calculated lint values of all three replications.

Variety	Lint	Seed	Turnout	Micro- naire	Fiber Length (in.)	Strength (g/tex)	Uniformity	Lint loan	Lint
	Yield	Yield						Value	Value
	--- lb/acre ---	--- lb/acre ---	--%--				--%--	cents/lb	--- \$/acre ---
FM 2011 GT*	1947 a	3048 a	0.34 a	2.8	1.14	29.4	79.8	45.13	869.75 ab
DP 1820 B3XF	1932 a	2788 a	0.33 ab	2.9	1.18	30.4	80.3	47.97	913.67 a
ST 4747 GLB2	1904 a	3017 a	0.29 ab	2.8	1.16	27.7	79.0	44.48	842.50 ab
FM 1888 GL	1904 a	3140 a	0.31 ab	2.7	1.20	30.7	80.8	45.82	853.33 ab
FM 1320 GL	1849 ab	3012 a	0.31 ab	2.8	1.12	30.1	80.3	46.63	845.67 ab
NG 3517 B2XF	1536 bc	2900 a	0.28 ab	2.6	1.17	31.7	80.9	45.90	692.00 bc
NG 3406 B2XF	1483 c	2523 a	0.30 ab	2.7	1.13	28.4	80.8	44.07	643.33 c
DP 1612 B2XF	1422 c	2693 a	0.27 b	2.7	1.17	31.2	80.4	45.05	633.67 c
NG 3780 B2XF	1446 c	2636 a	0.29 ab	2.8	1.17	31.0	80.2	44.72	636.00 c
<b>Test average</b>	<b>1714</b>	<b>2862</b>	<b>0.30</b>	<b>2.8</b>	<b>1.16</b>	<b>30.05</b>	<b>80.26</b>	<b>45.53</b>	<b>769.99</b>
CV, %	12.22	18.60	6.95	6.65	1.16	1.73	0.73	5.12	14.61
Std. Dev.	279.83	496.49	0.03	0.18	0.03	1.30	0.76	2.26	146.0377
p-value	0.0131	0.8009	0.0183	0.6441	<0.0001	<0.0001	0.0193	0.6102	0.0189
LSD	361.14	ns	0.0606	ns	0.0385	1.4876	1.6781	ns	193.23

Means within a column with the same letter are not significantly different at the 0.05 probability level.

CV - coefficient of variation.

\*Farmer Entry

Value for lint based on CCC loan value from grab samples and FBRI HVI results.

Lint loan value calculated from the 2018 Upland Cotton Loan Valuation Model from Cotton Incorporated using a \$0.52/pound base.

NG=NexGen, FM=FiberMax, ST=Stoneville, DP=DeltaPine

**Table 13.** 2018 Lint yield and quality for the Swisher County Irrigated RACE Trial, Jeremy Reed Farm, Kress, Texas (John Villalba County Extension Agent). The reported lint value is an average of the calculated lint values of all three replications.

Variety	Lint Yield		Seed Yield		Turnout	Micro- naire	Fiber Length (in.)	Strength (g/tex)	Uniformity --%--	Lint loan Value cents/lb	Lint Value -- \$/acre --		
	--- lb/acre ---		--- lb/acre ---										
FM 1888 GL	2221	a	2837	ab	0.36	ab	3.8	1.15	32.4	80.3	54.07	1184.00	ab
ST 4747 GLB2	2196	a	3064	a	0.33	ab	3.9	1.15	28.9	80.0	51.27	1108.67	a
FM 2322 GL*	2192	a	2567	b	0.36	ab	3.8	1.16	32.1	80.7	53.05	1141.33	ab
DP 1820 B3XF	2182	a	2541	b	0.37	a	4.0	1.18	32.9	80.7	54.72	1177.33	b
FM 1320 GL	2067	ab	2845	ab	0.34	ab	3.9	1.12	30.4	80.8	53.88	1098.33	ab
NG 3406 B2XF	2044	ab	2809	ab	0.34	ab	3.6	1.12	30.4	81.9	52.12	1045.00	ab
NG 3780 B2XF	1995	ab	2871	ab	0.32	b	3.6	1.14	32.3	81.2	53.72	1051.33	ab
NG 3517 B2XF	1897	ab	2842	ab	0.32	ab	3.7	1.14	32.4	81.5	53.70	998.67	ab
DP 1612 B2XF	1750	b	2503	b	0.33	ab	3.7	1.16	31.8	82.2	53.88	925.67	ab
<b>Test average</b>	<b>2060</b>		<b>2764</b>		<b>0.34</b>		<b>3.8</b>	<b>1.15</b>	<b>31.50</b>	<b>81.02</b>	<b>53.38</b>	<b>1081.15</b>	
CV, %	6.70		5.99		4.27		4.18	0.89	1.52	0.76	2.91	7.18	
Std. Dev.	191.70		226.11		0.20		0.20	0.02	1.33	0.87	1.65	104.0600	
p-value	0.0068		0.0089		0.0122		0.03	<0.0001	<0.0001	0.0059	0.2528	0.01	
LSD	395.01		474.02		0.0419		0.45	0.03	1.37	1.77	ns	222.13	

Means within a column with the same letter are not significantly different at the 0.05 probability level.

CV - coefficient of variation.

\*Farmer Entry

Value for lint based on CCC loan value from grab samples and FBRI HVI results.

Lint loan value calculated from the 2018 Upland Cotton Loan Valuation Model from Cotton Incorporated using a \$0.52/pound base.

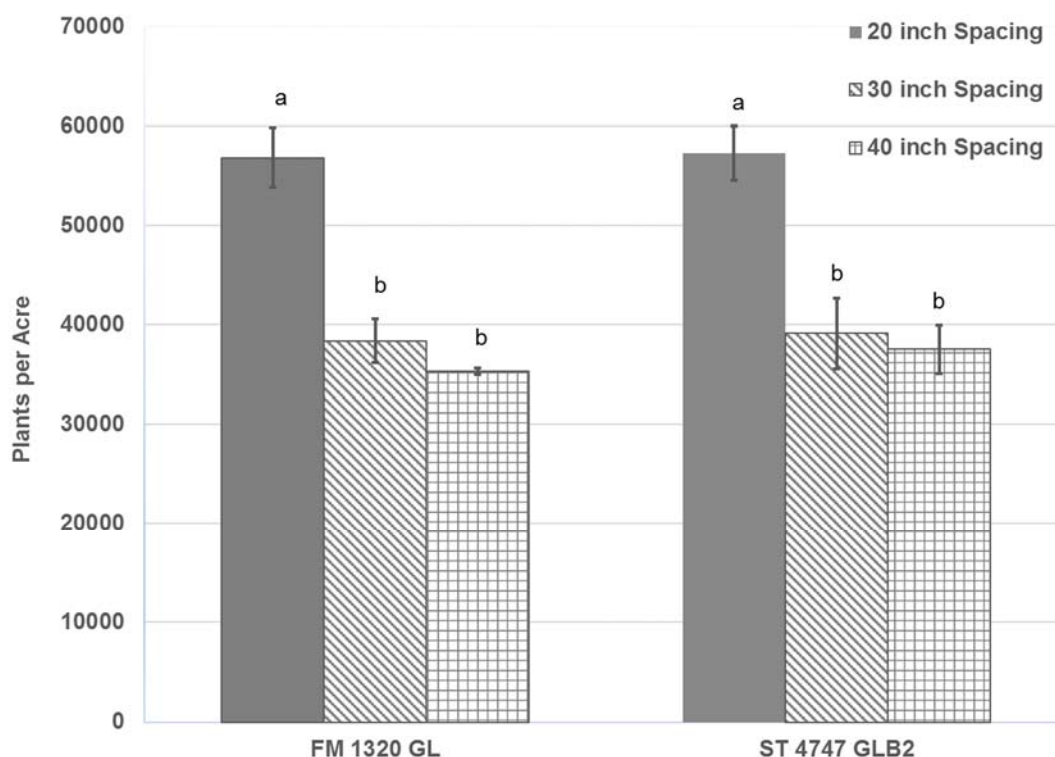
NG=NexGen, FM=FiberMax, ST=Stoneville, DP=DeltaPine



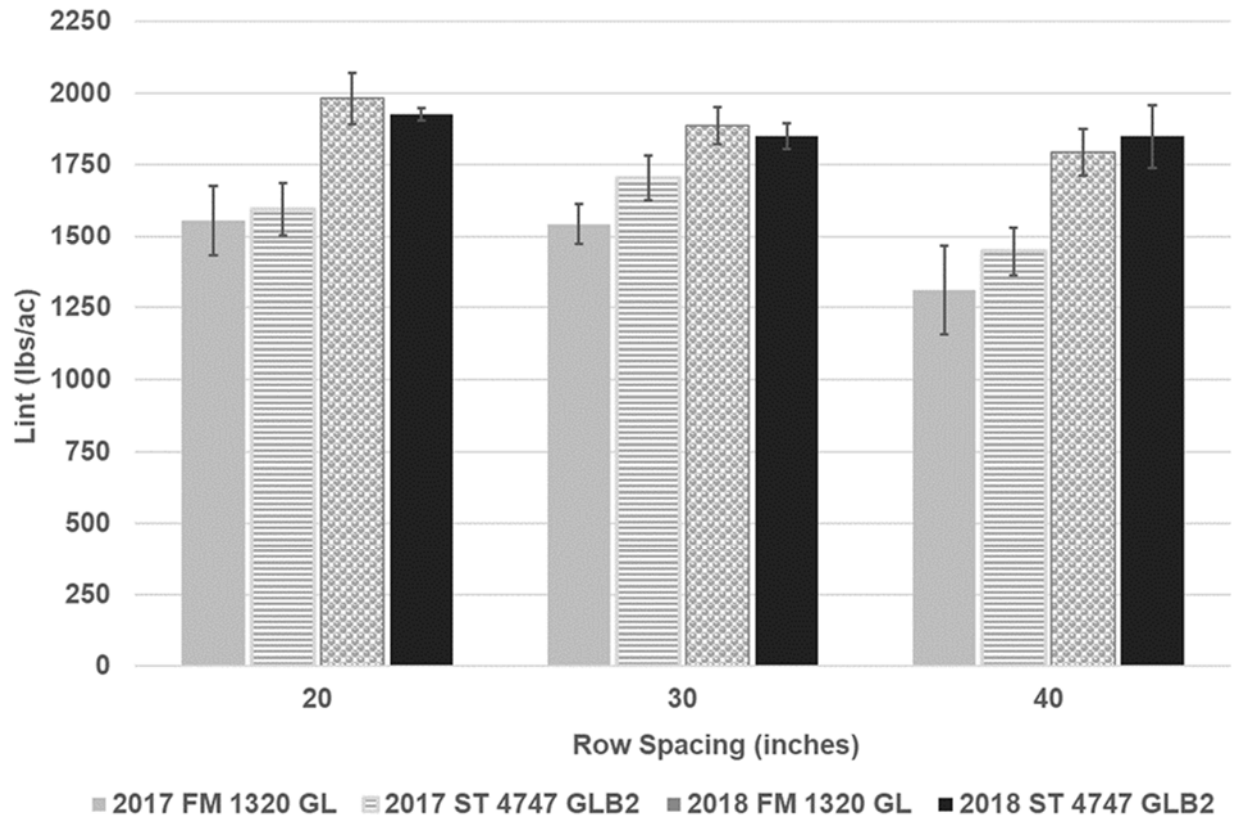
## Supplementary Trials to 2018 Panhandle RACE Trials

### 2018 Hutchinson County Row Spacing Trial

The 2018 Hutchinson County row spacing trial was a continuation of the 2017 row spacing trial. In both years, FM 1320GL and ST 4747GLB2 were planted on 20, 30, and 40 inch row spacings at a seeding rate to maintain approximately 3.1 seeds per row foot (80,000, 55,000, and 40,000 seeds per acre) rather than the same number of plants per acre. Because final plant stands are often 60-70% of the planted seed, the actual seeding rate of the 30- and 40-inch row spacings was increased to 60,000 and 50,000 seeds per acre to compensate for stand reductions. Plots were planted on May 8, 2018, and final plant stands were evaluated 4-weeks post planting (Fig. 2). There was a significant difference between row spacings ( $p=0.0257$ ), but there were no differences between varieties ( $p=0.5672$ ). The final plant stand for the 20-inch seeding rate was significantly greater than plant populations at 30- and 40-inch row spacings. There were no significant differences in lint for fiber quality parameters when evaluating differences between each variety and row spacing interaction (Table 14; Fig. 3). There were no significant differences between the varieties evaluated. When only considering row spacing, there were significant differences in lint yield ( $p=0.0257$ ) and parameters between the 20- and 40-inch spacings (Table 15).



**Figure 2.** Four-week post planting stand counts for the Hutchinson County 2018 row spacing trial.



**Figure 3.** Comparison of 2017 and 2018 lint data for the 2018 Hutchinson County row spacing trial.

**Table 14.** 2018 Hutchinson County row spacing lint yield and fiber quality. The reported lint value is an average of the calculated lint values of all three replications.

Variety	Row Spacing (in.)	Lint Yield --- lb/acre ---	Seed Yield --- lb/acre ---	Turnout --%--	Micro-naire	Fiber Length (in.)	Strength (g/tex)	Uniformity --%--	Lint loan Value cents/lb	Lint Value --- \$/acre ---
FM 1320 GL	20	1981 a	2909 ab	0.35 ab	3.9	1.13	30.8	80.7	52.10	1033.56 a
ST 4747 GLB2	20	1927 a	3223 a	0.32 d	3.7	1.13	31.1	80.1	48.35	931.65 ab
FM 1320 GL	30	1888 a	2734 b	0.36 a	3.5	1.13	30.7	81.0	52.27	987.72 ab
ST 4747 GLB2	30	1849 a	2888 b	0.33 dc	3.5	1.17	29.6	79.1	48.63	899.60 ab
FM 1320 GL	40	1849 a	2689 b	0.34 bc	3.5	1.15	29.6	79.5	51.85	928.43 ab
ST 4747 GLB2	40	1793 a	2929 ab	0.33 dc	3.3	1.18	30.6	79.9	44.52	822.50 b
<b>Test average</b>		<b>1881</b>	<b>2895</b>	<b>0.34</b>	<b>3.6</b>	<b>1.15</b>	<b>30.41</b>	<b>80.06</b>	<b>49.62</b>	<b>933.91</b>
CV, %		3.93	4.11	4.27	4.42	2.05	1.52	1.27	2.91	7.11
p-value		0.0953	0.0021	<0.0001	0.01	0.0507	0.0509	0.2764	0.0238	0.0322
LSD		ns	325.99	0.0419	0.43	ns	ns	ns	4.74	182.21

Means within a column with the same letter are not significantly different at the 0.05 probability level.

CV - coefficient of variation.

Value for lint based on CCC loan value from grab samples and FBRI HVI results.

Lint loan value calculated from the 2018 Upland Cotton Loan Valuation Model from Cotton Incorporated using a \$0.52/pound base.

FM=FiberMax, ST=Stoneville, DP=DeltaPine

**Table 15.** 2018 Hutchinson County row spacing lint yield and fiber quality by row spacing. Because there were no significant differences between varieties, reported row spacing data in this table is an average of FM 1320GL and ST 4747GLB2 at each respective row spacing. The reported lint value is an average of the calculated lint values of all three replications.

Row Spacing (in.)	Lint Yield --- lb/acre ---	Seed Yield --- lb/acre ---	Turnout --%--	Micro-naire	Fiber Length (in.)	Strength (g/tex)	Uniformity --%--	Lint loan Value cents/lb	Lint Value --- \$/acre ---
20	1954 a	3066 a	0.34 b	3.8	1.15	30.2	79.9	50.23	982.61 a
30	1868 ab	2811 b	0.35 ab	3.5	1.14	30.4	79.8	50.45	943.66 ab
40	1821 b	2809 b	0.33 b	3.4	1.16	30.6	80.4	48.18	875.46 b
<b>Test average</b>	<b>1881</b>	<b>2895</b>	<b>0.34</b>	<b>3.6</b>	<b>1.15</b>	<b>30.41</b>	<b>80.06</b>	<b>49.62</b>	<b>933.91</b>
CV, %	3.93	4.10	1.71	4.42	2.05	2.03	1.27	5.37	7.11
p-value	0.0257	0.0037	0.0090	0.0030	0.6302	0.5651	0.1666	0.3040	0.0467
LSD	113.82	183.08	0.0089	0.24	ns	ns	ns	ns	222.13

Means within a column with the same letter are not significantly different at the 0.05 probability level.

CV - coefficient of variation.

Value for lint based on CCC loan value from grab samples and FBRI HVI results.

Lint loan value calculated from the 2018 Upland Cotton Loan Valuation Model from Cotton Incorporated using a \$0.52/pound base.

FM=FiberMax, ST=Stoneville, DP=DeltaPine

## 2018 Hutchinson County Seeding Rate Trial

Optimized seeding rates are necessary to maximize lint yield while minimizing production costs. In the Texas Panhandle, the final plant stand is approximately 60% of the planted population (as seen in the 2018 RACE trial) so, many producers increase seeding rates to increase the plant density. However, compensatory plant growth often occurs at reduce stands compensating for reduced plant populations. To evaluate seeding rates under an irrigated Texas Panhandle cotton system, a small seeding rate trial was conducted adjacent to the Hutchinson County Irrigated RACE Trial. FM 1320GL was planted on May 8, 2018 at 60,000, 80,000, and 100,000 seeds per acre on 20-inch rows. There was no significant difference between lint production ( $p=0.7997$ ) or fiber properties for any seeding rate. Although non-significant, the lint value for the 100,000 seeds/acre seeding rate was \$26.70 greater than the lint value of the 60,000 seeds/acre seeding rate (Table 16). However, the increased cost associated with planting an additional 40,000 seeds/acre was \$45.46, which resulted in a production loss of -\$18.76/acre at the higher seeding rate.

**Table 16.** 2018 Hutchinson County seeding rate trial lint yield and fiber data.

Seeding Rate (1000 Seeds/Ac)	Lint Yield --- lb/acre ---	Seed Yield --- lb/acre ---	Turnout --%--	Micro- naire	Fiber Length (in.)	Strength (g/tex)	Uniformity --%--	Lint loan Value cents/lb	Lint Value --- \$/acre ---	Seed Cost --- \$/acre ---
60	1940 a	2894 a	0.34 b	4.0	1.12	31.4	80.6	52.05	1009.64 a	68.18
80	1982 a	2909 a	0.35 a	3.9	1.13	30.8	80.7	52.10	1032.59 a	90.91
100	1952 a	2900 a	0.35 b	4.0	1.12	31.2	80.4	53.10	1036.34 a	113.64
<b>Test average</b>	<b>1958</b>	<b>2901</b>	<b>0.35</b>	<b>4.0</b>	<b>1.12</b>	<b>31.13</b>	<b>80.59</b>	<b>52.42</b>	<b>1026.19</b>	
Std. Dev.	156	179	0.01	0.2	0.01	0.48	0.83	2.85	88.68	
CV, %	5.71	4.72	2.87	4.74	1.91	2.51	0.98	5.36	8.14	
p-value	0.7997	0.9814	0.5151	0.5689	0.7438	0.5265	0.8942	0.9643	0.8752	
LSD	ns	ns	ns	ns	ns	ns	ns	ns	ns	

Means within a column with the same letter are not significantly different at the 0.05 probability level.

CV - coefficient of variation.

Value for lint based on CCC loan value from grab samples and FBRI HVI results.

Lint loan value calculated from the 2018 Upland Cotton Loan Valuation Model from Cotton Incorporated using a \$0.52/pound base.

FM=FiberMax, ST=Stoneville, DP=DeltaPine

## Acknowledgements

We wish to express our appreciation to the cooperators for making the RACE trials possible. They generously provide use of land, assistance and equipment for planting and harvesting. We thank Dr. Jane Dever and Ms. Valerie Morgan (Texas A&M AgriLife Research) for the use of the ginning facilities and the Texas Tech University Fiber and Biopolymer Research Institute for HVI fiber quality analyses. We sincerely thank seed companies (Americot, Bayer, Dow and Monsanto) for entering top cotton varieties positioned for the Texas Panhandle. We appreciate Plains Cotton Growers for supporting these trials. We appreciate the assistance of Texas A&M AgriLife student employees; Bronc Finch, Layney Miller, Jammie Moore and Mattie Brooks.



<http://cotton.tamu.edu>