

2022 Texas Panhandle Replicated Agronomic Cotton Evaluation (RACE)



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2022 Texas Panhandle Highlights

The objective of the Texas Panhandle replicated agronomic cotton evaluations (RACE Trials) is to provide producers regional, on-farm, and unbiased comparisons of top cotton varieties marketed for Panhandle cotton production systems. The 2022 Texas Panhandle RACE trials were planted at 7 locations under varying crop rotations, row spacings, and populations (Table 1). Three locations failed; the Hansford County trial was hailed out and the Moore and Parmer County trials failed because of weather related field variability. Early to medium maturing varieties were planted at each location as a seed company entry or a cooperating producer entry (Table 2).

Regionally, above-average May temperatures and widespread drought (Image 1) resulted in poor stands and crop failure. In the southern and western Panhandle, most dryland fields failed and many cotton fields under limited irrigation reached cutout in late July because of extreme water stress, which was enhanced where irrigation was shared with corn. Dryland and irrigated fields were more uniform in the eastern Panhandle. The majority of the seasonal rainfall was received late-July to mid-August, but in most cases, the rain conributed to excess late-seaon vegetative growth and did not benefit lint production. Where early season irrigation was managed to retain early fruiting positions, timely rainfall later in the season during the bloom and boll

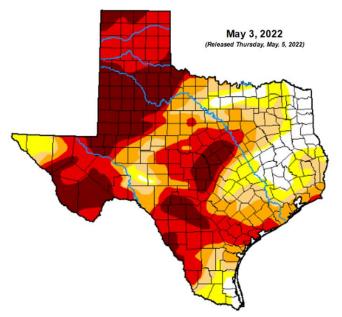


Image 1. Texas drought monitor May 3, 2022, representing D3 (extreme) and D4 (exceptional) https://droughtmonitor.unl.edu/data/png/202205 03/20220503_tx_trd.png.

maturation periods enhanced lint yields and quality. Growing degree days (GDDs) were not limiting in 2022. The average 2022 cumulative GDDs were 2,496, which was 334 GDDs greater than the previous 6-year average of 2,178 for the RACE trial locations.

Cotton germination and emergence often occur for 2- or more weeks after planting under Panhandle conditions. To more accurately represent final plant stands, stand count data is collected 30-days after planting. The 2022 final plant stand was 46-67% of the planted seed (Tables 3 and 4).

The Swisher County dryland trial was an "established" dryland field trial designed by Blayne Reed. The two Swisher trials were located on one center pivot with low well capacity. To improve irrigation water efficiency by increasing yields per inch of water applied, in-season irrigation was concentrated on half the planted acreage (the irrigated trial), but to ensure more uniform stands under dryland conditions, the "dryland" acreage received a one-inch irrigation after planting to ensure crop establishment. This irrigation ensured establishment, but because of extreme drought conditions, a yield benefit was not recognized. The highest yielding irrigated variety in 2022 was FM 1621 GL at the Hutchinson County trial (1,927 lbs. lint/acre; Tables 5 and 10).

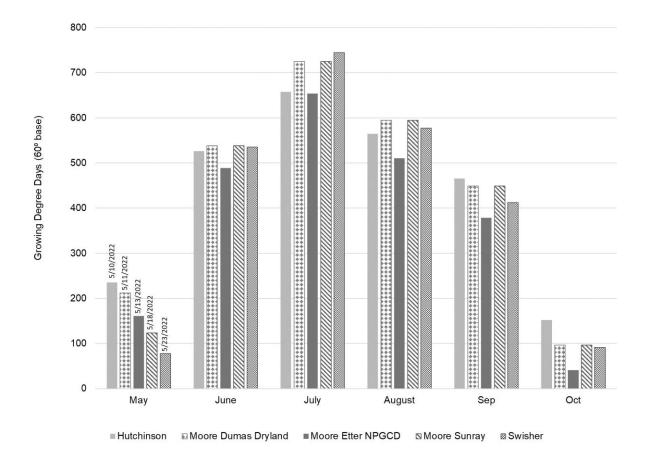


Figure 1. Distribution of growing degree days (GDD60) accumulated from planting through October. Planting date for each location noted above May bars. In November, negligible GDDs were accumulated, or defoliation had occurred. Temperature data at the Hutchinson County trial, Moore County Etter and Moore County Dumas trials was collected from a Texas A&M AgriLife weather station located at the field site. Temperature data for the Moore County Sunray trial is from the AgriLife station located ~3.5 miles SW of the field site. Temperature data for the Swisher County trial was collected from a NWS observation site at Tulia (https://www.weather.gov/wrh/Climate?wfo=lub).

Table 1.	2022 Agrono	mic informat	ion b	y location.

County	Hansford	Hutchinson	Moore	Moore	Moore	Parmer	Swisher	Swisher
Location (Nearest Town)	Gruver	Pringle	Dumas	Etter	Sunray	Farwell	Kress	Kress
Cooperator	Greg Slough	Craig McCloy	Justin Garrett	NPGCD (Stan Spain)	Chandler Preston	Ryan Williams	Jeremy Reed	Jeremy Reed
County Agent(s)	Kristy Slough	Hanna Conner & Kristy Slough	D. Coker & Fischbacher	D. Coker & Fischbacher	D. Coker & Fischbacher	John Thobe & Janelle Duffy	Blayne Reed & Jason Wade	Blayne Reed & Jason Wade
Irrigation Regime	Irrigated	Irrigated	Dryland	Irrigated	Irrigated	Limted Irrigated	Irrigated	Est. Dryland
In-Season Precipitation (in.)		5.0	8.4	7.6	7.9		8.4	8.4
Growing Degree Days (DD60s)		2,511	2,635	2,233	2,571		2,438	2,438
Herbicide Technologies	Gly, Gluf, XF	Gly, Gluf, XF	Gly, Gluf, XF	XF	Gly, Gluf, XF, Enlist	XF	XF	XF
Planting Date	5/19/2022	5/10/2022	5/11/2022	5/13/2022	5/18/2022	5/12/2022	5/23/2022	5/23/2022
Plantiong Pop (Seeds/ac)	50,000	90,000	25,000	74,500	55,000	40,000	50,000	24,500
Soil Temp. at Planting (°F)	74	68	85	75	67		67	67
Harvest Date	Failed	10/27/2022	Failed	11/6/2022	12/6/2022	Failed	12/1/2022	12/1/2022
Row Spacing (in.)	30	20	30	30	30	40	40	40

Table 2. Characteristics of varieties evaluated in 2022 Panhandle RACE trials. All variety characteristics are obtained from company variety descriptions. Varieties listed are seed company and farmer entries.

Variety	Maturity	Herbicide Package	Leaf Type	Storm Tolerance*	Plant Height	Mic	Verticilium Tol.**	Bacterial Blight**
Armor 9371 B3XFł	Early-Med	Glyphos., Glufos., and Dicamba	Semi-Smooth	3	Medium	4.5-4.6	Good	Tolerant
DynaGro 3469 B3XFł	Early-Med	Glyphos., Glufos., and Dicamba	Smooth	9	Medium	4.4	Average-Good	Very Tolerant
Deltapine 1820 B3XF	Early-Med	Glyphos., Glufos., and Dicamba	Semi-Smooth	3.5	Med-Tall	4.1	Moderate	Resistant
Deltapine 1822 XF	Early-Med	Glyphos., Glufos., and Dicamba	Semi-Smooth	3	Med-Tall	4.3	Moderate	Resistant
DeltaPine 1908 B3XF	Very Early	Glyphos., Glufos., and Dicamba	Smooth	5	Medium	3.9	Mod. Susceptible	Resistant
Deltapine 1909 B3XF	Very Early	Glyphos., Glufos., and Dicamba	Smooth	5	Med-Tall	3.6	Mod. Susceptible	Resistant
Deltapine 2012 B3XF	Early	Glyphos., Glufos., and Dicamba	Smooth	4	Med-Tall	4.3	Mod. Tolerance	Resistant
DeltaPine 2020 B2XFł	Early-Med	Glyphos., Glufos., and Dicamba	Semi-Smooth	4	Med-Tall	4.3	Mod. Tolerance	Resistant
DeltaPine 2115 B3XF	Early	Glyphos., Glufos., and Dicamba	Semi-Smooth	4	Medium	4.6	Mod. Susceptible	Moderate
DeltaPine 2123 B3XF	Early-Med	Glyphos., Glufos., and Dicamba	Semi-Smooth	4	Medium	4.4	Mod. Susceptible	Mod. Susceptible
DeltaPine 2127 B3XF	Early-Med	Glyphos., Glufos., and Dicamba	Smooth	7	Med-Tall	4.7	Mod. Susceptible	Susceptible
FiberMax 1621 GL	Early	Glyphosate and Glufosinate	Semi-Hairy	6	Medium	4.2	Fair	Resistant
FiberMax 1730 GLTP	Early-Med	Glyphosate and Glufosinate	Semi-Smooth	5	Short	4.2	Good	Resistant
FiberMax 1888 GL	Early-Med	Glyphosate and Glufosinate	Semi-Smooth	6	Medium	3.6	Fair	Resistant
FiberMax 2202 GL	Med	Glyphosate and Glufosinate	Semi-Smooth	5	Medium	4.6	Outstanding	Resistant
FiberMax 2398 GLTP	Med	Glyphosate and Glufosinate	Semi-Smooth	5	Med-Tall	4.4	Very Good	Resistant
NexGen 3195 B3XF	Early	Glyphos., Glufos., and Dicamba	Semi-Smooth	9	Medium	4.0-4.2	Very Good	Very Tolerant
NexGen 3729 B2XF	Early-Med	Glyphos., Glufos., and Dicamba	Semi-Smooth	3	Tall	4.4-4.6	Fair	Fair
NexGen 3930 B3XF l	Early-Med	Glyphos., Glufos., and Dicamba	Semi-Smooth	7	Med-Tall	4.1-4.5	Very Good	Very Tolerant
NexGen 3956 B3XFŧ	Early-Med	Glyphos., Glufos., and Dicamba	Semi-Smooth	8	Med-Tall	4.3-4.7	Very Good	Very Tolerant
Phytogen 205 W3FEł	Very Early	Glyphosate, Glufosinate, and Enlis	st Semi-Smooth	Excellent	Short	4.5	Tolerant	Resistant
Stoneville 4993 B3XF	Early-Med	Glyphos., Glufos., and Dicamba	Semi-Smooth	6	Medium	4.6	Fair	Fair

#Farmer entry

*Storm Tolerance (1-9): 1=Loose Boll, 9=Tight Boll from company variety descriptions.

** Verticillium and bacterial blight tolerance from company descriptions.

Table 3. Four-week post planting stand counts by location.

			Moore				
	Hutch -	Moore	Etter	Moore	Parmer		Swisher
	inson	Dumas	NPGCD	Sunray	Deficit	Swisher	Est.
	Irrig.	Dryland	Irrig.	Irrig.	Irrig.	Irrig.	Dryland
Planted Seeds/Acre	90,000	25,000	74,500	55,000	40,000	50,000	24,500
			Meas	sured plants	s/acre	•	·
Armor 9371 B3XFł					23,032		
DynaGro 3469 B3XF l			43,996		*		
DeltaPine 1820 B3XF	54,886		43,342	41,818	21,072	27,770	
DeltaPine 1822 XF		10,890				39,640	18,186
DeltaPine 1908 B3XF	52,708		53,143	39,785	26,463	32,343	
DeltaPine 1909 XF		15,827					16,117
DeltaPine 2012 B3XF		4,211					16,226
DeltaPine 2020 B2XFł				39,640			
DeltaPine 2115 B3XF	49,005		47,698	36,155	24,339	25,592	
DeltaPine 2123 B3XF		9,148					13,939
DeltaPine 2127 B3XF	58,153		52,272	36,736	26,953	27,334	
FiberMax 1621 GL	57,717	15,827					
FiberMax 1730 GLTP	59,677						
FiberMax 1888 GL		15,101					
FiberMax 2202 GL		12,197					
FiberMax 2398 GLTP	50,747						
NexGen 3195 B3XF	56,682	11,906	48,787	40,656	23,522	30,710	12,959
NexGen 3299 B3XF	45,411	11,471	32,017	26,717	18,949	17,860	8,930
NexGen 3930 B3XFł		11,761					
NexGen 3956 B3XFŧ		12,778					
Phytogen 205 W3FEł	66,429						
Stoneville 4993 B3XF	51,945	7,550	45,883	34,703	22,052	28,641	11,217
Trial Average	54,851	11,556	45,892	37,026	23,298	28,736	13,939
CV, %	9.8	16.1	10.8	10.4	12.9	9.7	14.4
p-value	0.0016	<0.0001	0.0703	0.0049	0.2689	<0.0001	0.0007
LSD	9,225	3,155	NS	6,668	NS	4,809	3,546

*Varieties not planted at the respective location.

Farmer entry

Stand counts were measured approximately 30 days post planting. All locations represent stand counts from all 3 replications with the exception of Parmer County and Moore County at NPGCD which represent 2 replications.

Table 4. Four-week post planting stand counts as a fraction of the planted population.

			Moore				
	Hutch -	Moore	Etter	Moore	Parmer		Swisher
	inson	Dumas	NPGCD	Sunray	Deficit	Swisher	Est.
	Irrig.	Dryland	Irrig.	Irrig.	Irrig.	Irrig.	Dryland
Planted Seeds/Acre	90,000	25,000	74,500	55,000	40,000	50,000	24,500
			Meas	sured plants	s/acre		
Armor 9371 B3XFł					0.58		
DynaGro 3469 B3XFł			0.59		*		
DeltaPine 1820 B3XF	0.61		0.58	0.76	0.53	0.56	
DeltaPine 1822 XF		0.44				0.79	0.74
DeltaPine 1908 B3XF	0.59		0.71	0.72	0.66	0.65	
DeltaPine 1909 XF		0.63					0.66
DeltaPine 2012 B3XF		0.17					0.66
DeltaPine 2020 B2XFł				0.72			
DeltaPine 2115 B3XF	0.54		0.64	0.66	0.61	0.51	
DeltaPine 2123 B3XF		0.37					0.57
DeltaPine 2127 B3XF	0.65		0.70	0.67	0.67	0.55	
FiberMax 1621 GL	0.64	0.63					
FiberMax 1730 GLTP	0.66						
FiberMax 1888 GL		0.60					
FiberMax 2202 GL		0.49					
FiberMax 2398 GLTP	0.56						
NexGen 3195 B3XF	0.63	0.48	0.65	0.74	0.59	0.61	0.53
NexGen 3299 B3XF	0.50	0.46	0.43	0.49	0.47	0.36	0.36
NexGen 3930 B3XFł		0.47					
NexGen 3956 B3XFł		0.51					
Phytogen 205 W3FEł	0.74						
Stoneville 4993 B3XF	0.58	0.30	0.62	0.63	0.55	0.57	0.46
Trial Average	0.61	0.46	0.62	0.67	0.58	0.57	0.57

*Varieties not planted at the respective location.

#Farmer entry

Stand counts were measured approximately 30 days post planting. All locations represent stand counts from all 3 replications with the exception of Parmer County and Moore County at NPGCD which represent 2 replications.

Table 5. 2022 Lint yield, quality, and loan value results for the Texas A&M AgriLife irrigated RACE Trial located in Hutchinson County, Craig

 McCloy Cooperator.

	Seed Cotton Yield	Turnout	Lint Yield	Seed Yield	Micro-	Fiber Length	Strength	Uniformity	Lint Ioan Value	Lint Value
Variety	Ib/acre	%		Ib/acre	naire	(in.)	(g/tex)	%	cents/lb	\$/acre
FM 1621 GL	4763	40	1927	2721	3.6	1.21	30	82	50.3	969
NG 3195 B3XF	4879	36	1752	2474	3.5	1.21	29	83	51.3	899
DP 1820 B3XF	4882	35	1725	2435	3.5	1.31	30	83	52.5	906
FM 2398 GLTP	4606	36	1660	2343	3.3	1.23	29	83	50.0	830
PHY 205 W3FE*	4961	32	1604	2264	3.7	1.18	32	83	55.8	894
DP 2127 B3XF	4228	38	1588	2243	3.4	1.18	29	83	51.7	821
DP 2115 B3XF	4006	39	1555	2196	3.3	1.20	29	82	47.0	734
FM 1730 GLTP	4534	34	1532	2163	3.3	1.28	31	83	49.9	762
DP 1908 B3XF	4642	32	1497	2114	3.6	1.26	30	83	51.1	764
NG 3299 B3XF	4131	35	1440	2033	3.3	1.22	31	83	50.5	727
ST 4993 B3XF	4369	32	1392	1965	3.3	1.21	31	83	51.7	717
Test Average	4545	35	1606	2268	3.4	1.23	30	83	51.1	820
CV, %	3.0	5.7	6.0	6.0	5.9	1.2	2.7	0.55	6.7	9.0
p-value	<0.0001	0.0003	<0.0001	<0.0001	0.1517	< 0.0001	0.0032	0.0613	0.3529	0.0025
LSD	228	3.4	163	230	NS	0.02	1.4	NS	5.80	124

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

Lint loan value calculated from the 2022 Upland Cotton Loan Evaluation Model from Cotton Incorporated using a \$0.52/pound base.

Samples ginned on a Compass gin at TTU-FBRI.

Seed value calculated using 1.41 lbs seed/lb lint.

*Farmer Entry

Table 6. 2022 Lint yield, quality, and loan value results for the Texas A&M AgriLife irrigated RACE Plots located at North PlainsGroundwater Conservation District's Water Conservation Center in Moore County, Stan Spain Cooperator.

	Seed Cotton Yield	Turnout	Lint Yield	Seed Yield	Micro-	•	•	Uniformity	Lint Ioan Value	Lint Value
Variety	Ib/acre	%	lb/acre	Ib/acre	naire	(in.)	(g/tex)	%	cents/lb	\$/acre
DP 2127 B3XF	4022	33	1328	1875	3.9	1.16	29.2	83	56.9	755
ST 4993 B3XF	3809	35	1326	1872	4.0	1.18	30.1	83	57.4	760
DG 3469 B3XF*	3652	35	1271	1794	3.9	1.18	28.6	83	56.0	713
DP 2115 B3XF	3365	37	1239	1750	3.7	1.19	28.9	83	56.0	693
DP 1820 B3XF	3948	31	1228	1733	4.0	1.29	30.8	84	57.2	702
NG 3299 B3XF	3362	36	1204	1701	4.0	1.20	31.6	84	57.3	690
NG 3195 B3XF	3831	31	1170	1652	3.8	1.21	29.3	83	57.0	667
DP 1908 B3XF	3583	31	1113	1571	3.5	1.25	29.9	83	52.6	583
Test Average	3697	34	1235	1744	3.8	1.21	29.8	83	56.3	695
CV, %	20.9	6.1	16.5	16.5	3.4	1.2	0.8	0.4	2.3	15.9
p-value	0.9733	0.0988	0.9514	0.9514	0.0414	0.0003	< 0.0001	0.1140	0.0761	0.8048
LSD	NS	NS	NS	NS	0.3	0.03	0.50	NS	NS	NS

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

Lint loan value calculated from the 2022 Upland Cotton Loan Evaluation Model from Cotton Incorporated using a \$0.52/pound base.

Samples ginned on a Compass gin at TTU-FBRI.

Seed value calculated using 1.41 lbs seed/lb lint.

*Farmer Entry

Table 7. 2022 Lint yield, quality, and loan value results for the irrigated Texas A&M AgriLife RACE Plots located in Moore County, Curtis Preston Cooperator.

Variety	Seed Cotton Yield Ib/acre	Turnout %	Lint Yield lb/acre	Seed Yield Ib/acre	Micro- naire	Fiber Length (in.)	Strength (g/tex)	Uniformity %	Lint Ioan Value cents/lb	Lint Value \$/acre
DP 1820 B3XF	4604	36	1649	2328	3.9	1.22	29.7	82	56.9	938
								_		
ST 4993 B3XF	4905	33	1611	2275	4.1	1.16	30.9	83	57.3	924
DP 1908 B3XF	5002	32	1602	2261	3.5	1.21	30.2	82	53.3	853
DP 2127 B3XF	4450	35	1554	2194	3.9	1.14	27.4	82	56.6	879
NG 3299 B3XF	4530	33	1490	2104	4.0	1.19	30.9	83	57.4	856
NG 3195 B3XF	4767	31	1480	2090	3.8	1.20	29.8	82	56.8	841
DP 2115 B3XF	4370	33	1430	2020	3.7	1.17	27.9	82	57.0	816
DP 2020 B2XF*	4298	32	1359	1919	3.4	1.18	27.1	81	53.6	728
Test Average	4616	33	1522	2149	3.79	1.18	29.2	82	56.1	854
CV, %	6.1	5.3	7.9	7.9	3.0	2.2	1.9	0.5	2.6	9.3
p-value	0.0751	0.0560	0.1175	0.1175	<0.0001	0.0312	<0.0001	0.0005	0.0129	0.1130
LSD	NS	NS	NS	NS	0.2	0.04	0.96	0.8	2.60	NS

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

Lint loan value calculated from the 2022 Upland Cotton Loan Evaluation Model from Cotton Incorporated using a \$0.52/pound base.

Samples ginned on a Compass gin at TTU-FBRI.

Seed value calculated using 1.41 lbs seed/lb lint.

*Farmer Entry

Table 8. 2022 Lint yield, quality, and loan value results for the Texas A&M AgriLife irrigated RACE Plots located in Swisher County, Jeremy Reed Cooperator.

	Seed Cotton Yield	Turnout	Lint Yield	Seed Yield	Micro-	Fiber Length	Strength	Uniformity	Lint Ioan Value	Lint Value
Variety	Ib/acre	%	Ib/acre	Ib/acre	naire	(in.)	(g/tex)	%	cents/lb	\$/acre
NG 3299 B3XF	2168	35	764	1079	4.9	1.16	30.2	83	54.9	596
DP 1908 B3XF	2357	31	739	1043	4.7	1.23	30.9	83	55.5	578
DP 2127 B3XF	2054	35	723	1021	5.1	1.17	28.3	83	55.1	561
DP 2115 B3XF	2050	34	704	994	4.8	1.20	28.9	83	56.5	561
ST 4993 B3XF	1836	37	673	950	5.3	1.12	30.2	83	53.1	504
NG 3195 B3XF	1956	34	672	949	4.6	1.18	29.7	83	56.0	532
DP1822 B3XF	2058	31	645	911	4.7	1.24	32.0	82	56.2	512
DP 1820 B3XF	1921	32	605	855	4.9	1.24	31.9	84	56.2	480
Test Average	2050	34	691	975	4.9	1.19	30.3	83	55.4	541
CV, %	15.1	7.0	18.3	18.3	4.1	2.8	3.4	0.8	2.8	19.1
p-value	0.5998	0.0886	0.8169	0.8169	0.0171	0.0044	0.0037	0.3525	0.2359	0.8560
LSD	NS	NS	NS	NS	0.3	0.06	1.8	NS	NS	NS

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

Lint loan value calculated from the 2022 Upland Cotton Loan Evaluation Model from Cotton Incorporated using a \$0.52/pound base.

Samples ginned on a Compass gin at TTU-FBRI.

Seed value calculated using 1.41 lbs seed/lb lint.

Table 9. 2022 Lint yield, quality, and loan value results for the Texas A&M AgriLife established dryland RACE Plots located in Swisher County, Jeremy Reed Cooperator. The established dryland plots received irrigation to establish the trial then the field was "dryland" the remainder of the season. All three reps were combined to make one round module when harvesting.

	Seed Cotton Yield	Turnout	Lint Yield	Seed Yield	Micro-	Fiber Length	Strength	Uniformity	Lint Ioan Value	Lint Value
Variety	Ib/acre	%	Ib/acre	Ib/acre	naire	(in.)	(g/tex)	%	cents/lb	\$/acre
NG 3299 B3XF	903	31	282	398	4.3	1.22	32.4	83	55.7	157
ST 4993 B3XF	773	32	251	354	4.3	1.21	31.3	83	57.0	143
DP 1820 XF	856	29	249	352	4.5	1.24	30.7	82	55.0	137
NG 3195 B3XF	762	30	227	320	4.2	1.22	29.2	82	56.4	128
DP 2123 B3XF	765	29	221	313	4.7	1.17	29.4	80	52.6	116
DP 2012 B3XF	873	25	218	308	4.4	1.29	31.5	82	56.6	123
DP 1822 XF	686	29	196	277	4.5	1.25	32.4	81	55.2	108
DP 1909 XF	668	29	191	269	4.3	1.22	29.7	81	54.9	105
Test Average	786	29	229	324	4.4	1.23	30.8	82	55.4	127

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

Lint loan value calculated from the 2022 Upland Cotton Loan Evaluation Model from Cotton Incorporated using a \$0.52/pound base.

Samples ginned on a Compass gin at TTU-FBRI.

Seed value calculated using 1.41 lbs seed/lb lint.

Table 10. Comparison of company entries between irrigated locations sorted by the maximum yielding location.

			Moore	
	Hutchin-	Moore	Etter	
	son	Sunray	NPGCD	Swisher
Variety		Lint Yiel	d (lb/ac)	
FM 1621 GL	1927	*		
NG 3195 B3XF	1752	1480	1170	672
DP 1820 B3XF	1725	1649	1228	605
FM 2398 GLTP	1660			
DP 2127 B3XF	1588	1554	1328	723
DP 2115 B3XF	1555	1430	1239	704
FM 1730 GLTP	1532			
DP 1908 B3XF	1497	1602	1113	739
NG 3299 B3XF	1440	1490	1204	764
ST 4993 B3XF	1392	1611	1326	673

*XF only trial (FiberMax varieties not at the respective locations)

Texas A&M AgriLife collaborated with North Plains Groundwater Conservation District to provide weekly video updates rotating between RACE trials within District boundaries. The weekly video series, Cotton and Conservation, provided NPGCD cotton producers real-time agronomic updates from Jourdan Bell, Dennis Coker, and Marcel Fischbacher under the respective environmental and management systems. Videos are available at:

http://northplainsgcd.org/conservationprograms/agricultural-conservation/cotton/

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http://cotton.tamu.edu



