



## **2023 Texas Panhandle Replicated Agronomic Cotton Evaluation (RACE)**

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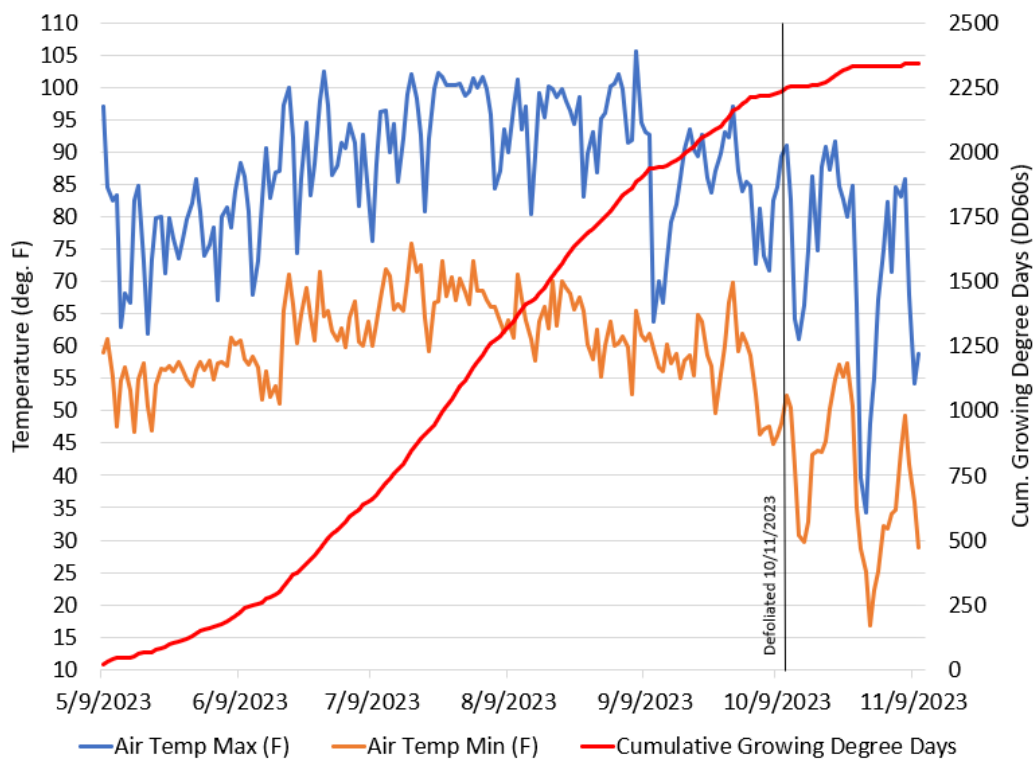
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Laura Taylor, Dallam and Hartley County  
Dennis Coker, Dallam, Moore and Sherman Counties  
Kristy Slough, Hansford County  
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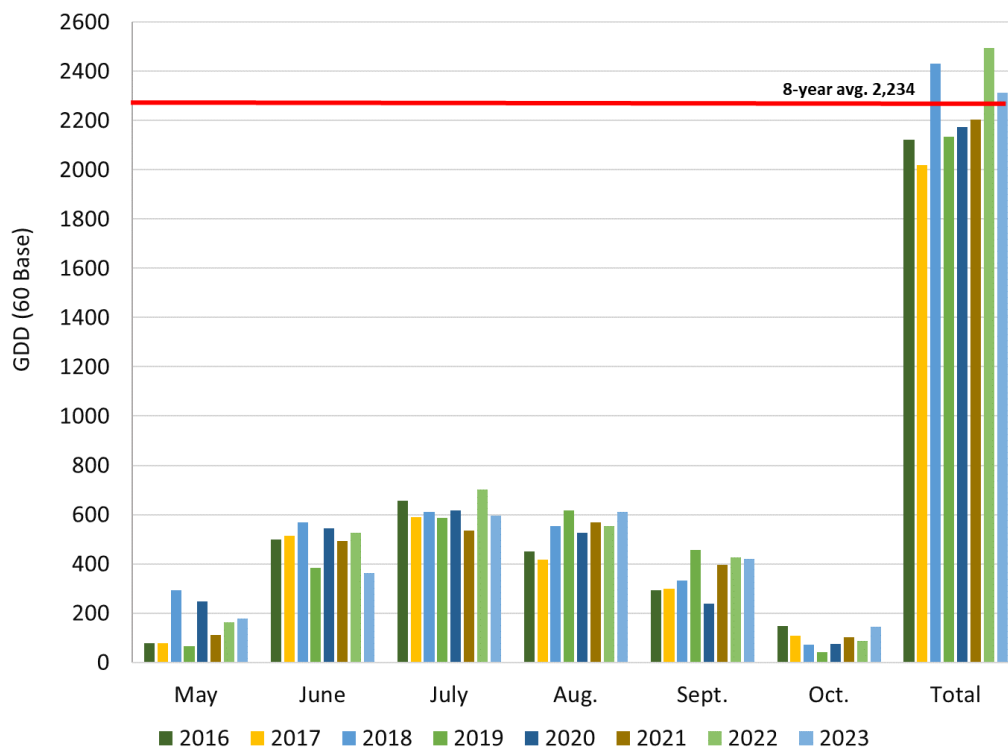
Jessica Smith

## **2023 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 2023 Texas Panhandle RACE trials were planted at 5 locations under varying crop rotations, row spacings, and populations (Table 1). Four locations failed because of weather related damage (hail and flooding). The Hutchinson County trial was the only location harvested. Early to medium maturing varieties were planted at each location as a seed company entry or a cooperating producer entry (Table 2). Cumulative GDDs at the Hansford County location was 2,331 (Fig. 1), which was in-line with the regional 8-year average of 2,234 (GDDs). The trial was defoliated on October 11 and harvested on November 10, 2023. The highest yielding variety was FiberMax 2202 GL (Table 3). Varieties were significantly different ( $p < 0.0001$ ), but there was no difference between the top 4 varieties. Fiber quality was significantly different between varieties ( $p < 0.0001$ ). Plant stands were not significantly different between varieties (Table 4). There was no correlation between maturity at the time of defoliation and micronaire using nodes above cracked boll (Table 5) as a maturity guideline ( $R^2 = 0.01$ ).



**Figure 1.** Daily temperature and cumulative growing degree days at the Hutchinson County trial.



**Figure 2.** Monthly and cumulative growing degree days at Texas Panhandle trial locations from 2016-2024.

**Table 1.** 2023 Agronomic information by location.

<b>County</b>	<b>Armstrong</b>	<b>Castro</b>	<b>Hartley</b>	<b>Hutchinson</b>	<b>Parmer</b>
<b>Location (Nearest Town)</b>	Claude	Dimmitt	Hartley	Pringle	Farwell
<b>Cooperator</b>	Madison Bagwell	Blake Fennel	Bill Graff	Craig McCloy	Vic Christian
<b>County Agent(s)</b>	Sami Hatley & Jody Bradford	Kristie Keys	Dennis Coker & Laura Taylor	Hanna Conner & Kristy Slough	John Thobe & Janelle Duffy
<b>Irrigation Regime</b>	Dryland	Dryland	Irrigated	Irrigated	Limited Irrigated
<b>In-Season Precipitation (in.)</b>	----	----	----	~14.5 (7.5 inches in May)	---
<b>Growing Degree Days (DD60s)</b>	----	----	----	2,511	---
<b>Herbicide Technologies</b>	Gly, Gluf, XF	Gly, Gluf, XF	Gly, Gluf, XF	Gly, Gluf, XF	Gly, Gluf, XF
<b>Planting Date</b>	5/23/2023	5/23/2023	5/11/2023	5/9/2023	5/10/2023
<b>Planting Pop (Seeds/ac)</b>	28,000	16,000	65,000	60,000	40,000
<b>Soil Temp. at Planting (°F)</b>	74	81	70	67	85
<b>Harvest Date</b>	Failed - Flooding	Failed - Hail	Failed - Hail	11/10/2023	Failed - Hail
<b>Row Spacing (in.)</b>	30	60	30	40	30

**Table 2.** Characteristics of varieties evaluated in 2023 Panhandle RACE trials. All variety characteristics are obtained from company variety descriptions. Varieties listed are seed company and farmer entries.

Variety	Maturity	Pesticide Trait Package	Leaf Type	Storm Tolerance <sup>1</sup>	Plant Height	Mic	Verticillium Tol. <sup>2</sup>	Bacterial Blight <sup>2</sup>
Deltapine 1820 B3XF	Early-Med	Bollgard 3*, Glyphos., Glufos., and Dicamba	Semi-Smooth	3.5	Med-Tall	4.1	Moderate	Resistant
Deltapine 2012 B3XF	Early	Bollgard 3, Glyphos., Glufos., and Dicamba	Smooth	4	Med-Tall	4.3	Mod. Tol.	Resistant
Deltapine 2211 B3TXF <sup>§</sup>	Early	Bollgard 3 Thryvon, Glyphos., Glufos., and Dicamba	Smooth	6.7	Med-Tall	4.4	Susc.	Resistant
Deltapine 2317 B3TXF	Early	Bollgard 3 Thryvon, Glyphos., Glufos., and Dicamba	Smooth	5.1	Med-Tall	4.5	Mod. Tol.	Resistant
FiberMax 1621 GL	Early	Glyphosate and Glufosinate	Semi-Hairy	6	Medium	4.2	Fair	Resistant
FiberMax 2202 GL	Med	Glyphosate and Glufosinate	Semi-Smooth	5	Medium	4.6	Outstanding	Resistant
FiberMax 2398 GLTP	Med	Glyphosate and Glufosinate; Twin Link Plus <sup>¥</sup>	Semi-Smooth	5	Med-Tall	4.4	Very Good	Resistant
NexGen 3195 B3XF	Early	Bollgard 3, Glyphos., Glufos., and Dicamba	Semi-Smooth	9	Medium	4.0-4.2	Very Good	Very Tol.
Phytogen 205 W3FE†	Very Early	WideStrike 3, Glyphosate, Glufosinate, and Enlist	Semi-Smooth	Excellent	Short	4.5	Tolerant	Resistant
Phytogen 332 W3FE†	Early-Med	WideStrike 3, Glyphosate, Glufosinate, and Enlist	Semi-Smooth	Excellent	Med-Tall	4.1	Tolerant	Resistant

†Farmer entry

<sup>1</sup>Storm Tolerance (1-9): 1=Loose Boll, 9=Tight Boll from company variety descriptions.

<sup>2</sup> Verticillium and bacterial blight tolerance from company descriptions.

<sup>§</sup> T in the trait code denotes a Thryvon variety.

\* Bollgard 3 contains three Bt proteins: Cry1Ac, Cry2AB and Vip3A.

<sup>¥</sup> TwinLink Plus provides three Bt proteins: Cry1Ab, Cry2Ae and Vip3Aa19.

\*\* WideStrike 3 contains three Bt proteins: Cry1Ac, Cry1F and Vip3A.

**Table 3.** 2023 Lint yield, quality, and loan value results for the Texas A&M AgriLife irrigated RACE Trial located in Hutchinson County, Craig McCloy Cooperator.

Variety	Seed Cotton Yield (lb/acre)	Turnout (%)	Lint Yield (lb/acre)	Seed Yield (lb/acre)	Micro-naire	Fiber Length (in.)	Unif. (%)	Strength (g/tex)	Leaf Grade	Lint loan Value (cents/lb)	Lint Value (\$/acre)
FM 2202 GL	5151	33	1710	2192	3.53	1.13	81.9	31.6	2.0	56.15	961
FM 1621 GL	4992	34	1683	2107	3.52	1.17	82.0	32.1	3.7	54.87	923
PHY 205 W3FE <sup>†</sup>	5123	32	1628	2339	4.03	1.09	81.5	32.2	2.0	55.83	908
FM 2398 GLT	4875	33	1624	2133	3.93	1.15	81.3	29.9	2.0	57.73	937
DP 1820 B3XF	4566	32	1483	1904	3.42	1.18	81.1	32.3	2.0	56.22	833
PHY 332 W3FE <sup>†</sup>	4530	30	1381	1982	3.03	1.16	81.5	31.3	2.0	52.17	694
DP 2012 B3XF	4239	32	1347	1881	3.12	1.15	81.2	31.3	2.0	52.73	713
NG 3195 B3XF	4249	31	1335	1871	2.97	1.15	82.3	31.1	2.3	50.65	677
DP 2317 B3TX	4150	30	1226	1801	2.64	1.16	81.3	29.7	2.0	45.62	559
DP 2211 B3T	3837	32	1217	1676	2.78	1.15	81.0	28.8	1.7	48.23	587
<b>Test Average</b>	<b>4573</b>	<b>32</b>	<b>1466</b>	<b>1989</b>	<b>3.30</b>	<b>1.15</b>	<b>81.5</b>	<b>31.0</b>	<b>2.2</b>	<b>53.02</b>	<b>779</b>
CV, %	3.5	3.3	5.0	5.6	7.2	1.8	1.2	3.9	14.9	5.9	7.8
p-value	<0.0001	0.0032	<0.0001	<0.0001	<0.0001	0.0067	0.7921	0.0231	<0.0001	0.0019	<0.0001
LSD	279	1.8	128	194	0.42	0.04	NS	2.1	0.6	5.5	109

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

Lint loan value calculated from the 2023 Upland Cotton Loan Evaluation Model from Cotton Incorporated using a \$0.52/pound base.

Samples ginned on a Compass gin at TTU-FBRI.

<sup>†</sup>Farmer Entry

**Table 4.** Four-week post planting stand counts at 2 locations.

	Hutchinson Irrigated	Hartley Irrigated Failed
<b>Planted Seeds/Acre</b>	60,000	65,000
	---- Measured plants/acre----	
NG 3195 B3XF	24,720	12,052
NG 3406 B2XF	-----*	13,504
FM 1621 GL	27,770	14,375
FM 2202 GL	29,621	14,665
FM 2398 GLT	31,908	21,490
DP 1820 B3XF	32,452	3,920
DP 2012 B3XF	31,908	17,714
DP 2211 B3T	27,661	16,117
DP 2317 B3TX	27,661	11,906
PHY 205 W3FE†	34,739	-----*
PHY 332 W3FE†	30,274	-----*
<b>Trial Average</b>	<b>29,871</b>	<b>13,971</b>
CV, %	14.2	58.9
p-value	0.2217	0.4543
LSD	NS	NS

\*Varieties not planted at the respective location.

†Farmer entry

Stand counts were measured approximately 30 days post planting. Data represents stand counts from all 3 replications.

**Table 5.** Hutchinson County average nodes above uppermost cracked boll on the day of defoliation (October 11, 2023). Each value is an average of 6 plants representing 2 plants per plot.

Variety	Average Nodes Above Uppermost Cracked Boll
NG 3195 B3XF	10
FM 1621 GL	13
FM 2202 GL	10
FM 2398 GLT	12
DP 1820 B3XF	8
DP 2012 B3XF	10
DP 2211 B3T	11
DP 2317 B3TX	9
PHY 205 W3FE†	7
PHY 332 W3FE†	6
<b>Trial Average</b>	<b>10</b>
p-value	0.1802
LSD	NS

†Farmer entry