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2020 TEXAS HIGH PLAINS REPLICATED AGRONOMIC COTTON EVALUATION (RACE) TRIAL REPORT

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Southern High Plains

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#cotton

2020 Southern High Plains

Replicated Agronomic Cotton Evaluation (RACE) Trial Results

Replicated Agronomic Cotton Evaluation (RACE) Trial at the Agricultural Complex for Advanced Research and Extension Systems (Ag-CARES) in Lamesa, TX. October 22, 2020.

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2020 Season Highlights

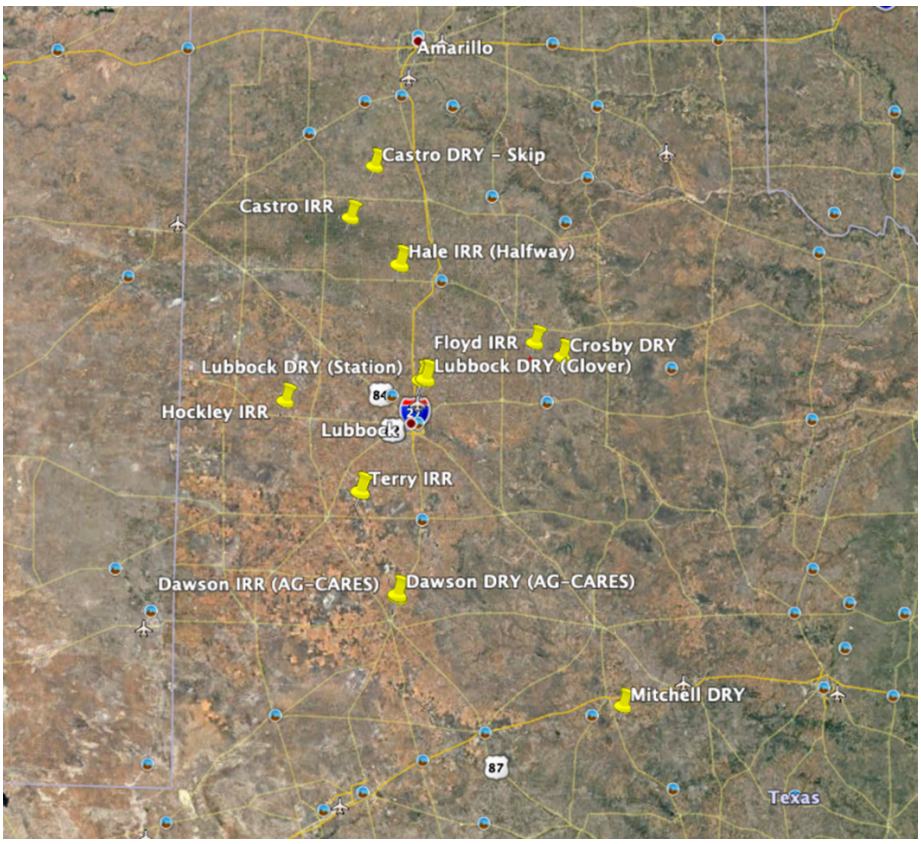
As the world continues to battle a global pandemic, it is more evident than ever that agriculture cannot stop. As other non-essential services were shutdown, farmers across the country never did. They adapted to ensure food and fiber made it out of the farm, as they always do. The 2020 season was riddled with challenges in the field, from start to finish. Rainfall, or the lack thereof, was yet again the main bottleneck for cotton production in our region. With warmer temperatures early in the spring, some farmers started planting early. What little moisture was available then, however, didn't make it very far before we were planting into dry soil. The lack of adequate planting moisture resulted in a great percentage of dryland fields failing to obtain a good plant stand, if emerged at all. Those with access to irrigation fared much better overall, but producers also struggled in places where water availability is limited. In-season precipitation was scarce and tended to favor areas east of I-27. A cold front early in September and a 2-day ice/snow event in late October closed out the season in style. Those weather events impacted overall fiber quality and caused some cotton to fall to the ground.

According to the USDA – Agricultural Marketing Service (AMS) farmers planted a total of 11.9 million acres of cotton in 2020, as compared to 13.5 million acres planted in 2019. The average yield per harvested acre was up 29 lb to 839 lb/A, as compared to 810 lb/A in 2019. The World Agricultural Supply and Demand Estimates (WASDE) January 2021 report indicates a near 1 million bale reduction in the 2020 production estimates, to 15 million bales, due to a 500,000-bale decline in the Texas crop. The same report indicates the upland season-average price received by U.S. farmers is projected 3 cents higher, at 68 cents per pound.

LIST of TABLES

2020 VARIETY LIST

	Dryland	Irrigated
1	DP 1646 B2XF	ARMOR 9210 B3XF
2	DP 1822 XF	ARMOR 9598 B3XF
3	FM 1621 GL	DP 1820 B3XF
4	FM 1888 GL	DP 1845 B3XF
5	FM 2498 GLT	FM 1621 GL
6	NG 3930 B3XF	FM 2202 GL
7	NG 4098 B3XF	FM 2398 GLTP
8	NG 4777 B2XF	NG 3930 B3XF
9	NG 4792 XF	NG 4098 B3XF
10	ST 5707 B2XF	NG 4777 B2XF
11		NG 4792 XF
12		ST 5600 B2XF



2020 RACE Trial Locations. Image: Google Earth

2020 VARIETY LINEUP CHARACTERISTICS

Table 1. Characteristics of varieties included in the 2020 Replicated Agronomic Cotton Evaluation (RACE) trials in the Southern High Plains of Texas.

Variety	Maturity	Herbicide Package	Leaf Type	Plant Height	MIC	Verticilium	Bacterial Blight	ST[1]
Armor 9210 B3XF	Early-Mid	Glufos, Glyphos, and Dicamba	Semi-Smooth	Medium-Tall	4.5 - 4.8	Moderate	Resistant	4
DeltaPine 1820 B3XF	Early-Mid	Glufos, Glyphos and Dicamba	Semi-Smooth	Medium-Tall	4.1	Moderate	Resistant	3.5
DeltaPine 1822 XF	Early-Mid	Glyphosate and Dicamba	Semi-Smooth	Medium-Tall	4.3	Moderate	Resistant	4
FiberMax 1621 GL	Early	Glyphosate and Glufosinate	Semi Hairy	Medium/Moderate	4.2	Fair	Resistant	6
FiberMax 1888 GL	Early-Mid	Glyphosate and Glufosinate	Semi-Smooth	Medium/Moderate	3.6	Fair	Resistant	6
NexGen 3930 B3XF	Early-Mid	Glufos, Glyphos, and Dicamba	Semi-Smooth	Medium-Tall	4.1 - 4.5	Good	Mod. Resistance	7
Armor 9598 B3XF	Medium	Glufos, Glyphos, and Dicamba	Smooth	Medium	4.3 - 4.7	Good	Resistant	3
FiberMax 2202 GL	Medium	Glyphosate and Glufosinate	Semi-Smooth	Moderate	4.6	Outstanding	Resistant	5
FiberMax 2398 GLTP	Medium	Glyphosate and Glufosinate	Semi-Smooth	Medium/Moderate	4.4	Very Good	Resistant	5
FiberMax 2498 GLT	Medium	Glyphosate and Glufosinate	Semi-Smooth	Medium-Tall/Vigorous	4.4	Very Good	Resistant	6
NexGen 4098 B3XF	Medium	Glufos, Glyphos, and Dicamba	Semi-Smooth	Medium-Tall	4.3 - 4.5	Good	Resistant	8
NexGen 4777 B2XF	Medium	Glufos, Glyphos, and Dicamba	Smooth	Tall	4.0 - 4.7	Very Good	Mod. Resistance	6
NexGen 4792 XF	Medium	Glufos, Glyphos, and Dicamba	Smooth	Medium-Tall	3.7 - 4.6	Very Good	Mod. Resistance	6
DeltaPine 1646 B2XF	Mid-Full	Glufos, Glyphos, and Dicamba	Smooth	Medium-Tall	4.1	Mod. Susceptibility	Mod. Resistance	5
DeltaPine 1845 B3XF	Mid-Full	Glufos, Glyphos, and Dicamba	Semi-Smooth	Medium	3.8	Mod. Susceptibility	Resistant	4
Stoneville 5600 B2XF	Mid-Full	Glufos, Glyphos, and Dicamba	Semi-Smooth	Tall/Vigorous	4.7	Good	Susceptible	5
Stoneville 5707 B2XF	Mid-Full	Glufos, Glyphos, and Dicamba	Semi-Smooth	Tall/Vigorous	4.2	Fair	Resistant	4

Variety descriptions, rankings and characteristics obtained from each seed company website.

[1] **Storm Tolerance**

2020 TRIAL LOCATION DETAILS

Table 2. Location, Cooperator, and remarks for the 2020 Southern High Plains Replicated Agronomic Cotton (RACE) Evaluation trials.

	Location	Irrigation	Cooperator	Planting Date	Harvest Date	Seeding Rate seeds/a	Remarks
1	Castro	–	Dale Wilhelm	5/13/2020	–	12,250	Skip Row/Lost - Drought
2	Castro	–	Dale Wilhelm	5/13/2020	–	24,500	Lost - Drought
3	Crosby	–	Alvarado/Appling	6/2/2020	11/2/2020	35,000	Skip row, 2 in, 1 out
4	Dawson	–	AG-CARES	6/15/2020	–	31,000	Replanted, Lost - Drought
5	Lubbock	–	Glover-AREC*	5/27/2020	9/30/2020	29,040	Hail + Sand Damage Early
6	Lubbock	–	Lubbock-AREC	6/16/2020	11/12/2020	29,040	Late Planting
7	Mitchell	–	Andrew Sauer	6/11/2020	–	23,000	Lost - Drought
8	Castro	I	Gregg Gerber	5/15/2020	11/11/2020	58,000	Round Bale Harvester
9	Dawson	I	AG-CARES	5/21/2020	10/23/2020	51,000	Sand Damage Early
10	Floyd	I	Alvarado/Appling	5/26/2020	11/10/2020	40,000	Limited Irrigation
11	Hale	I	Halfway-AREC	5/19/2020	11/9/2020	49,000	Hail + Sand Damage Early
12	Hockley	I	Seth Howard	5/20/2020	11/6/2020	39,000	None
13	Terry	I	Clay & David Lewis	5/23/2020	11/16/2020	30,400	Limited Irrigation

*AREC = Station/Facility managed by AgriLife

HEAT UNIT ACCUMULATION AND IN-SEASON PRECIPITATION

Table 3. Weather summary and in-season precipitation for 2020 RACE trials locations.

	Crosbyton, TX (June 2nd - Nov. 2nd)					Lubbock, TX (May 19th - Nov. 12th)					Lamesa, TX (May 21st - Oct. 23rd)				
	Precip.	Temp (° F)		DD60	# of 100°F Days	Precip.	Temp (° F)		DD60	# of 100°F Days	Precip.	Temp (° F)		DD60	# of 100°F Days
		Min	Max				Min	Max				Min	Max		
May	–	–	–	–	–	1.13	58	87	172	1	0.39	59	89	14	–
June	1.65	64	92	557	1	1.85	65	93	584	4	0.39	67	96	614	5
July	0.7	70	98	761	12	1.85	72	98	792	13	1.98	72	99	791	13
August	0.48	67	97	691	9	0.54	69	97	720	8	0.43	71	98	756	12
September	1.3	54	84	284	–	1.04	56	84	304	1	1.36	58	84	346	–
October	0.54	42	74	131	–	0.78	44	76	20	–	–	53	87	226	–
November	–	39	74	–	–	–	44	76	–	–	–	–	–	–	–
	4.67			2,423	22	7.19			2,591	27	4.55			2,747	30

	Hart, TX (May 15th - Nov. 11th)					Levelland, TX (May 20th - Nov. 6th)					Plainview, TX (May 19th - Nov. 9th)				
	Precip.	Temp (° F)		DD60	# of 100°F Days	Precip.	Temp (° F)		DD60	# of 100°F Days	Precip.	Temp (° F)		DD60	# of 100°F Days
		Min	Max				Min	Max				Min	Max		
May	0.72	52	87	165	–	0.02	54	89	144	1	0.57	54	87	145	–
June	0.46	59	90	453	2	1.45	62	92	530	3	1.01	63	91	519	1
July	1.97	64	95	609	6	0.25	68	96	710	11	0.58	69	96	721	9
August	0.57	61	93	544	4	0.65	95	65	622	4	1.4	66	95	643	4
September	0.39	49	81	166	–	0.07	82	52	222	1	0.74	53	82	233	1
October	0.43	38	72	44	–	0.44	41	74	106	–	1.2	41	72	99	–
November	–	37	74	–	–	–	39	77	–	–	–	42	75	–	–
	4.54			1,980	12	2.88			2,333	20	5.5			2,359	15

	Brownfield, TX (May 23rd - Nov. 16th)				
	Precip.	Temp (° F)		DD60	# of 100°F Days
		Min	Max		
May	0.01	55	87	103	–
June	1.77	64	94	575	4
July	0.98	70	98	766	15
August	0.44	98	67	707	12
September	0.3	54	84	289	1
October	1.08	43	76	161	–
November	–	40	74	–	–
	4.58			2,600	32

FINAL PLANT POPULATION BY VARIETY AT DRYLAND LOCATIONS

Table 4. Final plant population at dryland Replicated Agronomic Cotton Evaluation (RACE) Trial locations in 2020.

Variety	LBB_STATION		LBB_GLOVER		CROSBY	
	plants/a	(in %)	plants/a	(in %)	plants/a	(in %)
DP 1646 B2XF	14,810	51	12,854	44	2,397	7
DP 1822 XF	17,424	60	21,133	73	13,508	39
FM 1621 GL	16,335	56	27,451	95	14,161	40
FM 1888 GL	18,295	63	25,272	87	17,211	49
FM 2498 GLT	11,979	41	24,837	86	19,172	55
NG 3930 B3XF	23,522	81	24,619	85	18,736	54
NG 4098 B3XF	18,513	64	23,747	82	13,726	39
NG 4777 B2XF	18,077	62	20,044	69	9,150	26
NG 4792 XF	16,335	56	16,994	59	17,647	50
ST 5707 B2XF	18,295	63	29,194	100	18,519	53
Mean	17,359		22,614		14,423	
STDEV	3,964		6,990		6,411	
CV, %	23		31		44	
p-value	0.0481		0.1056		0.0064	
LSD[1]	3,292		n.s.[2]		4,684	

[1] **Least Significant Difference at 5% probability.**

[2] **Not statistically signifcant.**

FINAL PLANT POPULATION BY VARIETY AT IRRIGATED LOCATIONS

Table 5. Final plant population at irrigated Replicated Agronomic Cotton Evaluation (RACE) Trial locations in 2020.

Variety	DAWSON		CASTRO		FLOYD		HALE		HOCKLEY		TERRY	
	plants/a	(in %)	plants/a	(in %)	plants/a	(in %)	plants/a	(in %)	plants/a	(in %)	plants/a	(in %)
ARMOR 9210 B3XF	25,490	50	30,488	53	25,272	63	22,004	45	28,322	73	18,954	62
ARMOR 9598 B3XF	27,233	53	22,648	39	23,529	59	26,144	53	16,558	42	15,468	51
DP 1820 B3XF	25,272	50	27,439	47	21,787	54	29,412	60	24,837	64	15,033	49
DP 1845 B3XF	25,490	50	16,115	28	22,440	56	30,501	62	16,340	42	13,726	45
FM 1621 GL	23,529	46	36,585	63	29,848	75	21,569	44	34,205	88	22,440	74
FM 2202 GL	27,451	54	37,892	65	23,312	58	32,026	65	25,272	65	19,826	65
FM 2398 GLTP	32,680	64	41,812	72	26,797	67	20,261	41	32,244	83	23,094	76
NG 3930 B3XF	21,787	43	40,941	71	31,590	79	25,708	52	29,848	77	21,351	70
NG 4098 B3XF	29,848	59	34,408	59	28,540	71	24,401	50	14,815	38	18,519	61
NG 4777 B2XF	25,490	50	27,004	47	31,155	78	18,083	37	19,390	50	15,686	52
NG 4792 XF	20,479	40	28,310	49	31,590	79	28,758	59	24,183	62	18,519	61
ST 5600 B2XF	22,658	44	39,199	68	36,166	90	23,094	47	28,976	74	18,301	60
Mean	25,617		31,903		27,669		25,163		24,582		18,410	
STDEV	7,320		8,557		6,129		7,392		7,081		3,848	
CV, %	29		27		22		29		29		21	
p-value	0.8397		0.005		0.0423		0.4231		<0.0001		0.0141	
LSD[1]	n.s.[2]		4,465		4,591		n.s.		3,407		2,708	

[1] **Least Significant Difference at 5% probability.**

[2] **Not statistically signifcant.**

Table 6. Crosby County dryland RACE trial. Cooperators Mark and David Appling, Erik Alvarado.

Ranked by highest to lowest lint yield values. Seeding rate (35,000 seed/A). Skip-row pattern, 2in, 1 out.

Variety	Lint Yield (lb/A)	Turnout (%)	MIC	Length (in.)	Uniformity (%)	Strength (g/tex)	Color	Leaf	Loan Value (cents/lb)	Lint Value ($/A)
FM 1888 GL	107	35	4.8	1.04	80.0	27.9	11, 11, 11	1, 2, 3	51.0	54
DP 1822 XF	106	34	4.5	1.06	78.9	28.3	11, 11, 11	1, 2, 1	52.3	55
FM 1621 GL	104	35	4.8	1.02	79.7	28.5	21, 21, 21	2, 2, 3	50.6	63
ST 5707 B2XF	99	33	4.4	1.05	79.2	28.4	11, 21, 11	3, 4, 2	51.7	51
NG 4098 B3XF	98	33	4.7	1.03	80.2	28.7	11, 11, 11	2, 1, 1	50.7	50
NG 3930 B3XF	97	33	4.6	1.03	79.9	28.0	11, 11, 11	2, 3, 3	50.1	49
DP 1646 B2XF	95	32	4.7	1.04	79.5	28.1	21, 11, 11	3, 2, 1	51.7	49
FM 2498 GLT	85	27	4.7	1.06	79.5	28.8	21, 11, 11	2, 1, 1	52.2	45
NG 4792 XF	83	34	4.4	1.05	79.7	27.5	11, 11, 11	2, 3, 1	52.2	43
NG 4777 B2XF	79	35	4.4	1.07	80.0	28.1	11, 11, 11	2, 1, 1	53.7	42
Mean	95	33	4.6	1.04	79.7	28.2			52	50
STDEV	16	3.8	0.3	0.03	0.9	1.4			1.9	10
CV, %	17	11.6	5.6	2.6	1.2	4.8			3.8	19
p-value	0.4196	0.2576	0.4020	0.4614	0.8865	0.9897			0.5937	0.2798
LSD	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.			n.s.	n.s.

Loan value calculated using the Cotton Incorporated Upland Loan Calculator Program ($52.0 cents/lb base for 41 color, 4 leaf, 34 staple)
STDEV (standard deviation). CV (coefficient of variation). LSD (least significant difference, p <0.05).
https://www.cottoninc.com/cotton-production/ag-resources/cotton-farming-decision-aids/2020-upland-cotton-loan-calculator/

Table 7. Lubbock County dryland RACE trial located at the Glover Farm, east of the Texas A&M AgriLife Research and Extension Center – Lubbock.

Ranked by highest to lowest lint yield values. Seeding rate (29,040 seed/A).

Variety	Lint Yield (lb/A)	Turnout (%)	MIC	Length (in.)	Uniformity (%)	Strength (g/tex)	Color	Leaf	Loan Value (cents/lb)	Lint Value ($/A)
FM 2498 GLT	280	40	4.5	0.99	77.7	25.2	11, 11, 11	2, 2, 2	46.8	132
FM 1888 GL	218	34	4.0	1.00	78.2	25.9	11, 11, 11	1, 2, 1	46.9	103
FM 1621 GL	213	36	4.2	0.96	77.3	24.8	11, 11, 11	2, 1, 1	45.1	96
ST 5707 B2XF	201	34	4.3	1.04	79.0	29.2	11, 12, 11	2, 1, 2	51.3	104
NG 4792 XF	184	36	4.3	0.99	79.1	28.7	12, 11, 11	1, 1, 1	47.8	89
NG 4098 B3XF	182	35	3.8	1.03	77.2	27.0	11, 11, 11	1, 2, 2	49.6	91
NG 3930 B3XF	177	31	4.1	1.03	79.0	26.0	11, 11, 11	2, 1, 1	50.7	88
DP 1822 XF	168	32	3.9	1.02	78.0	28.0	11, 11, 11	1, 1, 1	50.3	85
NG 4777 B2XF	140	33	4.2	0.97	77.7	24.6	11, 11, 11	1, 1, 1	45.1	63
DP 1646 B2XF	138	38	4.0	1.04	77.9	26.5	11, 11, 11	2, 1, 1	49.9	69
Mean	190	35	4.1	1.01	78.1	26.6			48	92
STDEV	65	3.9	0.3	0.03	1.0	1.9			2.8	32
CV, %	34	11.3	6.8	3.3	1.3	7.1			5.8	35
p-value	0.2676	0.1338	0.1105	0.0016	0.1491	0.0021			0.0064	0.4318
LSD	n.s.	n.s.	n.s.	0.02	n.s.	1.2			1.9	n.s.

Loan value calculated using the Cotton Incorporated Upland Loan Calculator Program ($52.0 cents/lb base for 41 color, 4 leaf, 34 staple)
STDEV (standard deviation). CV (coefficient of variation). LSD (least significant difference, p <0.05).
https://www.cottoninc.com/cotton-production/ag-resources/cotton-farming-decision-aids/2020-upland-cotton-loan-calculator/

Table 8. Lubbock County dryland RACE trial located at the Texas A&M AgriLife Research and Extension Center – Lubbock. Ranked by highest to lowest lint yield values. Seeding rate (29,040 seed/A).

Variety	Lint Yield (lb/A)	Turnout (%)	MIC	Length (in.)	Uniformity (%)	Strength (g/tex)	Color	Leaf	Loan Value (cents/lb)	Lint Value ($/A)
NG 4792 XF	243	30	4.0	1.04	80.4	29.1	23, 23, 23	2, 1, 1	46.2	113
NG 4777 B2XF	186	26	3.9	1.04	79.9	28.3	22, 12, 13	1, 1, 1	49.8	94
NG 3930 B3XF	171	29	3.7	1.08	80.2	26.9	13, 13, 23	1, 2, 1	53.0	91
NG 4098 B3XF	158	26	3.4	1.11	79.5	30.7	22, 12, 12	3, 2, 3	47.3	74
DP 1646 B2XF	135	29	3.6	1.07	79.7	27.2	12, 12, 13	1, 1, 1	48.8	65
FM 2498 GLT	131	31	4.0	1.08	79.7	28.3	12, 22, 12	1, 1, 1	48.5	64
FM 1621 GL	130	29	3.8	1.04	78.9	28.4	12, 23, 12	2, 3, 2	48.7	64
DP 1822 XF	128	26	3.9	1.06	79.3	27.9	11, 23, 12	1, 1, 1	51.1	66
FM 1888 GL	123	29	3.8	1.06	79.5	28.1	12, 23, 12	2, 2, 1	52.2	64
ST 5707 B2XF	107	23	3.2	1.06	79.0	29.3	23, 23, 24	1, 2, 1	40.9	44
Mean	151	28	3.7	1.07	79.6	28.4			49	74
STDEV	54	3.4	0.3	0.02	0.8	1.2			4.0	28
CV, %	36	12.1	7.9	2.3	1.0	4.2			8.2	38
p-value	0.0540	0.0782	<0.0001	0.0015	0.4260	<0.0001			0.0015	0.0904
LSD	n.s.	n.s.	0.1	0.02	n.s.	0.6			2.5	n.s.

Loan value calculated using the Cotton Incorporated Upland Loan Calculator Program ($52.0 cents/lb base for 41 color, 4 leaf, 34 staple)
STDEV (standard deviation). CV (coefficient of variation). LSD (least significant difference, p <0.05).
https://www.cottoninc.com/cotton-production/ag-resources/cotton-farming-decision-aids/2020-upland-cotton-loan-calculator/

Table 9. Castro County irrigated RACE trial. Cooperator Gregg Gerber.

Ranked by highest to lowest lint yield values. Center pivot. Seeding rate (58,000 seed/A). Round bale on-board scale, 2 replications.

Variety	Lint Yield (lb/A)	Turnout (%)	MIC	Length (in.)	Uniformity (%)	Strength (g/tex)	Color	Leaf	Loan Value (cents/lb)	Lint Value ($/A)
FM 2202 GL	1,579	31	3.3	1.09	81.9	31.4	21, 11	2, 2	49.8	785
NG 4792 XF	1,523	29	3.3	1.09	81.9	30.2	11, 11	1, 2	49.7	757
FM 2398 GLTP	1,418	30	3.6	1.13	81.4	28.4	11, 31	1, 4	55.4	786
NG 3930 B3XF	1,338	28	2.9	1.13	80.6	28.2	11, 11	1, 2	45.9	612
FM 1621 GL	1,337	28	3.4	1.13	80.6	29.3	21, 11	3, 3	51.3	685
DP 1820 B3XF	1,292	29	3.1	1.17	80.1	29.8	11, 11	1, 1	50.2	648
NG 4098 B3XF	1,219	26	2.8	1.15	80.2	29.9	21, 11	4, 4	46.1	562
NG 4777 B2XF	1,209	26	2.8	1.09	79.6	28.7	11, 11	1, 1	44.6	538
ARMOR 9598 B3XF	1,118	29	2.8	1.11	80.6	27.9	11, 11	3, 1	43.9	491
ST 5600 B2XF	1,082	25	2.7	1.12	80.1	29.6	11, 11	4, 3	43.8	473
ARMOR 9210 B3XF	1,053	25	2.6	1.11	79.9	27.6	11, 11	1, 1	42.3	447
DP 1845 B3XF	942	24	2.4	1.15	79.3	28.3	11, 11	4, 3	36.9	347
Mean	1,259	28	3.0	1.12	80.5	29.1			47	594
STDEV	198	2.5	0.4	0.03	1.0	1.2			5.4	145
CV, %	16	9.0	13.0	2.6	1.2	4.1			11.6	24
p-value	0.0001	0.0148	0.0013	0.0135	0.0720	0.0019			0.0119	<0.0001
LSD	75	1.43	0.2	0.02	n.s.	0.6			3.1	50

Loan value calculated using the Cotton Incorporated Upland Loan Calculator Program ($52.0 cents/lb base for 41 color, 4 leaf, 34 staple)
STDEV (standard deviation). CV (coefficient of variation). LSD (least significant difference, p <0.05).
https://www.cottoninc.com/cotton-production/ag-resources/cotton-farming-decision-aids/2020-upland-cotton-loan-calculator/

Table 10. Dawson County irrigated RACE trial located at the Agricultural Complex for Advanced Research and Extension Systems (Ag-CARES) in Lamesa, TX. Cooperator Lamesa Cotton Growers.

Ranked by highest to lowest lint yield values. Sub-surface drip. Seeding rate (51,000 seed/A).

Variety	Lint Yield (lb/A)	Turnout (%)	MIC	Length (in.)	Uniformity (%)	Strength (g/tex)	Color	Leaf	Loan Value (cents/lb)	Lint Value ($/A)
DP 1820 B3XF	945	35	4.7	1.12	81.3	30.8	11, 11, 21	1, 1, 4	55.5	524
ARMOR 9210 B3XF	931	36	4.6	1.15	81.0	31.7	11, 11, 11	1, 1, 2	56.2	523
ST 5600 B2XF	906	35	5.0	1.06	81.0	29.9	11, 11, 21	1, 1, 2	52.8	476
NG 4792 XF	882	34	4.7	1.10	81.0	30.5	11, 11, 11	2, 1, 2	54.5	481
NG 3930 B3XF	872	37	4.7	1.13	80.5	31.9	11, 11, 11	1, 1, 1	56.5	492
NG 4777 B2XF	865	36	4.8	1.11	80.9	30.7	11, 11, 21	1, 2, 2	54.2	469
NG 4098 B3XF	862	36	4.8	1.11	80.5	31.0	21, 11, 21	1, 2, 2	56.1	483
FM 2398 GLTP	856	37	4.7	1.07	81.4	30.4	11, 11, 21	1, 1, 1	53.8	460
ARMOR 9598 B3XF	793	33	4.6	1.12	80.5	31.6	11, 11, 21	2, 1, 2	55.4	440
FM 1621 GL	756	35	4.8	1.09	80.5	30.6	21, 21, 21	2, 3, 1	55.1	416
FM 2202 GL	739	35	4.8	1.08	80.9	31.0	11, 11, 21	1, 1, 3	54.1	400
DP 1845 B3XF	707	34	4.5	1.12	80.3	31.8	11, 11, 11	1, 1, 1	55.5	393
Mean	843	35	4.7	1.11	80.8	31.0			55	463
STDEV	114	2.1	0.3	0.03	0.6	1.7			1.8	64
CV, %	14	6.1	6.8	3.1	0.7	5.6			3.2	14
p-value	0.1518	0.4900	0.9393	0.0226	0.4142	0.9714			0.2439	0.1483
LSD	n.s.	n.s.	n.s.	0.02	n.s.	n.s.			n.s.	n.s.

Loan value calculated using the Cotton Incorporated Upland Loan Calculator Program ($52.0 cents/lb base for 41 color, 4 leaf, 34 staple)
STDEV (standard deviation). CV (coefficient of variation). LSD (least significant difference, p <0.05).
https://www.cottoninc.com/cotton-production/ag-resources/cotton-farming-decision-aids/2020-upland-cotton-loan-calculator/

Table 11. Floyd County irrigated RACE trial. Cooperators Mark and David Appling, Erik Alvarado.

Ranked by highest to lowest lint yield values. Center pivot, limited water. Seeding rate (40,000 seed/A).

Variety	Lint Yield (lb/A)	Turnout (%)	MIC	Length (in.)	Uniformity (%)	Strength (g/tex)	Color	Leaf	Loan Value (cents/lb)	Lint Value ($/A)
NG 3930 B3XF	254	32	4.4	0.99	78.8	23.7	11, 21, 21	1, 1, 2	45.9	117
DP 1845 B3XF	229	33	4.3	1.03	78.6	26.5	21, 21, 11	3, 2, 2	49.2	112
FM 1621 GL	190	35	4.6	0.94	78.0	24.1	21, 21, 31	4, 3, 5	43.5	83
FM 2202 GL	190	37	4.4	0.96	79.4	26.7	21, 21, 21	3, 3, 3	47.9	91
NG 4792 XF	182	32	4.3	0.95	78.1	25.1	21, 21, 21	2, 2, 2	45.4	83
ARMOR 9598 B3XF	171	32	4.6	0.95	77.6	22.8	11, 21, 11	1, 2, 1	44.8	77
DP 1820 B3XF	168	33	4.4	1.02	78.7	25.1	11, 11, 11	1, 1, 1	48.3	82
NG 4098 B3XF	167	30	4.1	1.01	76.9	26.3	21, 21, 21	4, 5, 5	47.0	79
FM 2398 GLTP	166	34	4.4	0.96	77.8	23.6	21, 11, 21	1, 2, 3	45.0	75
NG 4777 B2XF	157	31	4.3	0.95	78.2	23.5	21, 11, 11	1, 1, 1	45.0	71
ST 5600 B2XF	144	34	4.8	0.99	79.1	26.1	21, 21, 21	2, 3, 2	48.3	69
ARMOR 9210 B3XF	133	38	4.8	1.01	78.7	26.8	11, 21, 11	1, 1, 2	48.2	64
Mean	179	34	4.4	0.98	78.3	25.0			47	83
STDEV	50	3.0	0.3	0.03	0.8	1.8			2.5	24
CV, %	28	8.9	6.1	3.5	1.1	7.1			5.4	29
p-value	0.1227	0.0292	0.0074	0.0001	0.0024	0.0054			0.0558	0.1398
LSD	n.s.	2.07	0.2	0.02	0.5	1.1			n.s.	n.s.

Loan value calculated using the Cotton Incorporated Upland Loan Calculator Program ($52.0 cents/lb base for 41 color, 4 leaf, 34 staple)
STDEV (standard deviation). CV (coefficient of variation). LSD (least significant difference, p <0.05).
https://www.cottoninc.com/cotton-production/ag-resources/cotton-farming-decision-aids/2020-upland-cotton-loan-calculator/

Table 12. Hale County irrigated RACE trial located at the Texas A&M AgriLife Research and Extension Center –Halfway.

Ranked by highest to lowest lint yield values. Center pivot. Seeding rate (49,000 seed/A).

Variety	Lint Yield (lb/A)	Turnout (%)	MIC	Length (in.)	Uniformity (%)	Strength (g/tex)	Color	Leaf	Loan Value (cents/lb)	Lint Value ($/A)
ARMOR 9598 B3XF	679	41	3.9	1.03	78.7	28.1	21, 11, 11	2, 2, 2	48.6	330
NG 3930 B3XF	598	35	4.1	1.06	80.9	30.2	11, 11, 11	2, 1, 1	53.4	319
DP 1845 B3XF	581	36	4.0	1.07	80.2	28.6	11, 11, 11	1, 1, 1	53.9	313
DP 1820 B3XF	572	36	4.0	1.07	80.0	29.0	21, 11, 11	3, 2, 1	53.7	307
ARMOR 9210 B3XF	530	33	4.1	1.05	80.6	29.9	11, 11, 11	3, 1, 1	52.7	278
NG 4098 B3XF	525	37	4.1	1.05	80.2	28.7	11, 21, 11	1, 2, 2	50.8	267
ST 5600 B2XF	519	35	3.7	1.10	80.8	30.1	11, 11, 11	1, 1, 1	53.2	276
NG 4777 B2XF	510	36	3.8	1.09	80.2	29.0	11, 11, 11	1, 1, 2	50.8	260
NG 4792 XF	503	34	3.9	1.06	80.6	29.7	11, 11, 11	2, 1, 2	53.6	270
FM 2398 GLTP	447	33	4.0	1.08	79.6	29.8	21, 11, 11	4, 1, 1	53.8	239
FM 1621 GL	446	36	4.0	1.08	80.5	29.0	11, 11, 11	1, 1, 1	55.2	246
FM 2202 GL	384	35	3.7	1.10	79.4	30.3	21, 11, 11	4, 2, 1	52.8	204
Mean	525	36	3.9	1.07	80.1	29.4			53	276
STDEV	128	3.3	0.5	0.04	1.0	1.4			2.4	64
CV, %	24	9.4	11.6	3.8	1.2	4.8			4.5	23
p-value	0.3508	0.3223	0.9911	0.6388	0.2662	0.7128			0.0329	0.4800
LSD	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.			1.7	n.s.

Loan value calculated using the Cotton Incorporated Upland Loan Calculator Program ($52.0 cents/lb base for 41 color, 4 leaf, 34 staple)

STDEV (standard deviation). CV (coefficient of variation). LSD (least significant difference, p <0.05).

https://www.cottoninc.com/cotton-production/ag-resources/cotton-farming-decision-aids/2020-upland-cotton-loan-calculator/

Table 13. Hockley County irrigated RACE trial. Cooperator Seth Howard.

Ranked by highest to lowest lint yield values. Center pivot. Seeding rate (39,000 seed/A). Fibermax varieties cultivated due to weed pressure at early bloom.

Variety	Lint Yield (lb/A)	Turnout (%)	MIC	Length (in.)	Uniformity (%)	Strength (g/tex)	Color	Leaf	Loan Value (cents/lb)	Lint Value ($/A)
DP 1820 B3XF	1,012	35	4.6	1.13	81.3	30.7	11, 11, 11	1, 1, 1	55.9	565
NG 3930 B3XF	1,005	34	4.7	1.12	81.9	27.9	11, 11, 11	1, 1, 1	55.9	562
ARMOR 9210 B3XF	968	35	4.3	1.12	81.2	29.6	11, 11, 11	1, 2, 1	52.0	506
NG 4792 XF	924	33	4.5	1.08	82.3	30.0	11, 11, 11	1, 1, 2	54.6	505
DP 1845 B3XF	917	32	3.8	1.16	80.8	29.6	11, 11, 11	3, 1, 2	54.6	499
ARMOR 9598 B3XF	911	34	4.7	1.10	81.1	28.1	11, 11, 11	1, 1, 1	55.9	509
FM 2398 GLTP	906	38	4.5	1.11	80.6	28.8	21, 21, 11	3, 3, 2	55.4	501
NG 4098 B3XF	885	30	3.7	1.17	80.6	31.8	11, 21, 21	2, 4, 4	56.2	497
ST 5600 B2XF	847	33	4.4	1.11	81.8	30.3	12, 11, 11	1, 1, 1	55.8	472
NG 4777 B2XF	820	30	4.2	1.08	79.9	28.7	11, 11, 11	1, 1, 1	54.2	444
FM 2202 GL	760	32	4.4	1.10	81.8	30.5	11, 11, 21	2, 2, 3	55.7	423
FM 1621 GL	724	29	4.1	1.11	81.1	30.5	21, 11, 11	4, 3, 3	55.5	401
Mean	890	33	4.3	1.12	81.2	29.7			55	490
STDEV	131	3.7	0.5	0.03	0.8	1.3			2.0	72
CV, %	15	11.3	12.6	3.1	1.0	4.3			3.6	15
p-value	0.1362	0.1605	0.4161	0.0081	0.0044	<0.0001			0.3712	0.1307
LSD	n.s.	n.s.	n.s.	0.02	0.5	0.6			n.s.	n.s.

Loan value calculated using the Cotton Incorporated Upland Loan Calculator Program ($52.0 cents/lb base for 41 color, 4 leaf, 34 staple)
STDEV (standard deviation). CV (coefficient of variation). LSD (least significant difference, p <0.05).
https://www.cottoninc.com/cotton-production/ag-resources/cotton-farming-decision-aids/2020-upland-cotton-loan-calculator/

Table 14. Terry County irrigated RACE trial. Cooperators Clay and David Lewis.

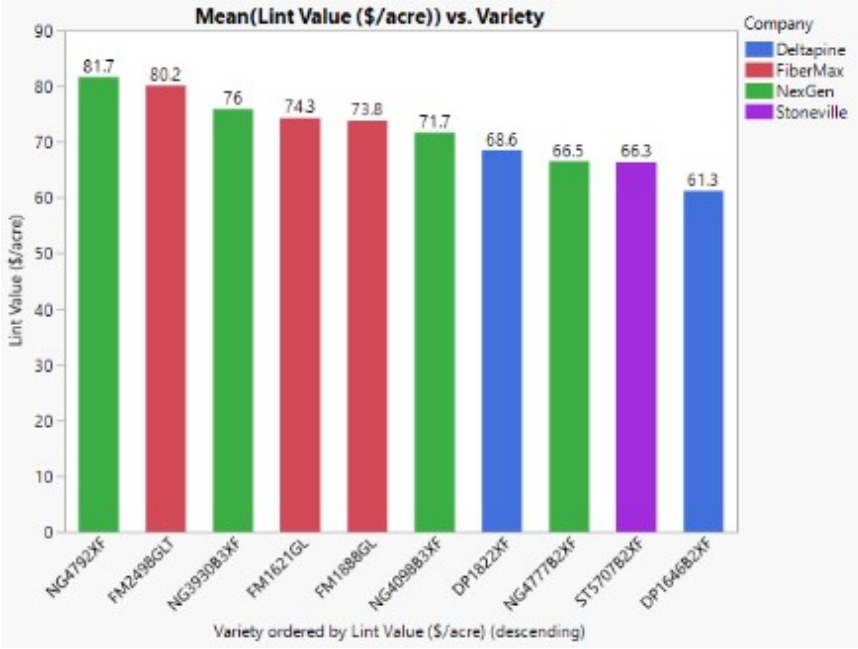
Ranked by highest to lowest lint yield values. Center pivot, limited water. Seeding rate (30,400 seed/A). Weed pressure on Fibermax varieties.

Variety	Lint Yield (lb/A)	Turnout (%)	MIC	Length (in.)	Uniformity (%)	Strength (g/tex)	Color	Leaf	Loan Value (cents/lb)	Lint Value ($/A)
NG 3930 B3XF	223	35	4.7	1.02	79.2	24.8	11, 11, 21	1, 1, 2	47.4	106
NG 4098 B3XF	205	34	4.1	1.07	77.8	28.9	21, 11, 11	2, 2, 2	53.1	109
NG 4792 XF	196	36	4.7	1.03	80.4	28.2	11, 11, 11	1, 1, 1	51.0	100
ARMOR 9598 B3XF	193	37	4.7	1.01	79.1	24.8	21, 11, 11	1, 1, 1	46.2	89
NG 4777 B2XF	180	37	4.9	1.04	80.2	27.1	11, 11, 11	1, 1, 1	49.7	89
ARMOR 9210 B3XF	177	37	4.8	1.08	80.6	28.6	11, 11, 11	1, 1, 1	53.2	94
DP 1845 B3XF	173	36	4.6	1.08	80.0	28.5	11, 11, 11	1, 3, 1	54.5	95
ST 5600 B2XF	170	35	4.6	1.06	79.2	28.4	11, 11, 11	2, 1, 1	52.4	89
DP 1820 B3XF	154	37	4.7	1.03	79.4	28.4	11, 21, 11	1, 3, 1	51.1	78
FM 2202 GL*	147	35	4.4	0.99	79.5	27.9	21, 21	3, 3	48.6	71
FM 2398 GTLP	136	36	4.8	1.00	78.8	25.3	21, 21, 11	3, 2, 1	46.8	63
FM 1621 GL	128	39	4.6	0.97	78.0	24.3	21, 21, 21	3, 1, 5	44.0	56
Mean	174	36	4.6	1.03	79.3	27.1			50	87
STDEV	43	3.4	0.3	0.04	1.0	1.9			3.5	22
CV, %	25	9.4	6.4	3.8	1.3	7.2			7.0	26
p-value	0.2024	0.9605	0.0543	<0.0001	0.0002	<0.0001			<0.0001	0.0651
LSD	n.s.	n.s.	n.s.	0.02	0.5	0.9			1.3	n.s.

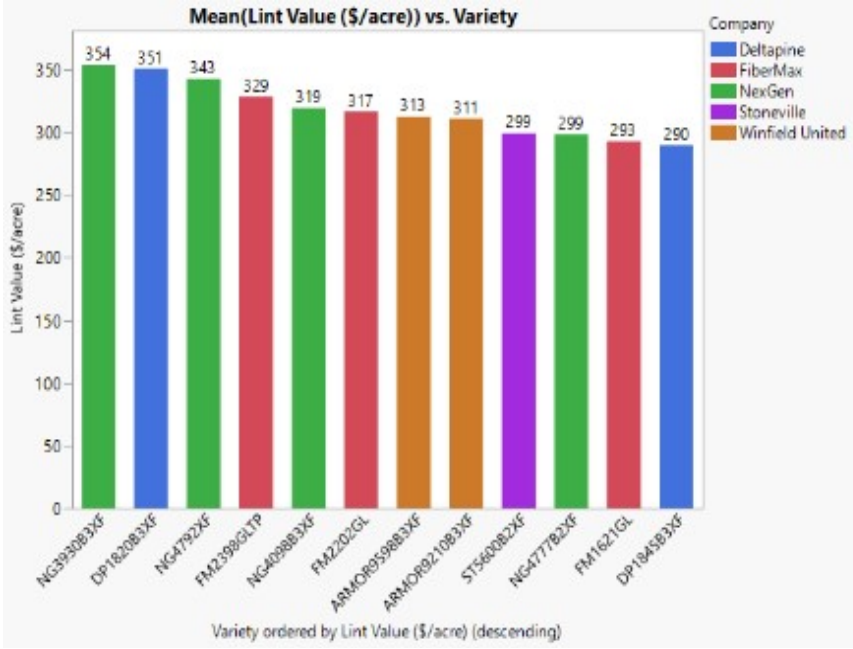
Loan value calculated using the Cotton Incorporated Upland Loan Calculator Program ($52.0 cents/lb base for 41 color, 4 leaf, 34 staple)
STDEV (standard deviation). CV (coefficient of variation). LSD (least significant difference, p <0.05).
https://www.cottoninc.com/cotton-production/ag-resources/cotton-farming-decision-aids/2020-upland-cotton-loan-calculator/
** 2 replications only*

AVERAGE LINT VALUE ($/A) BY VARIETY FOR DRYLAND AND IRRIGATED TRIALS

3-Location Dryland Average



6-Location Irrigated Average



2020 Texas Panhandle
Replicated Agronomic Cotton Evaluation (RACE)

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Kristy Slough, Hutchinson County Agent
Marcel Fischbacher, Moore County Agent

2020 Texas Panhandle
Replicated Agronomic Cotton Evaluation (RACE)

Texas A&M AgriLife Extension 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 under the respective environmental and management systems. Videos are available at: http://northplainsgcd.org/conservationprograms/agricultural-conservation/cotton/

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, and BASF) for entering top cotton varieties positioned for the Texas Panhandle. We appreciate Plains Cotton Grower's Plains Cotton Improvement Programs for supporting Texas Panhandle cotton activities. We appreciate the assistance of Texas A&M AgriLife student employees; Layney Miller and Shelby Lain.

2020 Texas Panhandle Highlights

The Texas Panhandle RACE trials provide regional producers a comparison of top cotton varieties marketed for Panhandle cotton production systems. In 2020, a series of weather events impacted cotton acres from planting through harvest. Regionally, above-average spring temperatures resulted in early planting across much of the northern Texas Panhandle, and above-average growing degree day (GDD) accumulation in May (Figs. 1 and 2). However, above-average temperatures and below-average rainfall resulted in dry soils and no trials planted in the southwestern Texas Panhandle. A June 9 windstorm affected cotton acres across the entire region resulting in blown-out fields or severe crop injury and delayed development. June and July temperatures ranging from 95°F to 108°F at field sites drove crop water demands. Timely precipitation in July coincided with the bloom period across most northern Panhandle sites, but many precipitation events were coupled with hail. Hot and dry conditions in August increased crop water demands. In September, an early cold snap (September 8-9) with low temperatures less than 40°F for 10 to 20 hours depending on the location. A low of 34°F was reached at the Dallam County trial. This weather event negatively impacted micronaire development across the northern Panhandle. An early October ice storm was the final terminating event for regional cotton fields. As a result of cumulative in-season stress, lint yield and grades were negatively impacted at most northern Panhandle trials.

The 2020 Texas Panhandle RACE Trials were planted at eight locations under varying crop rotations, row spacings and populations (Table 1). Two locations were terminated because of hail injury (Sherman/Sunray and Swisher). Early to early-mid maturing double and triple herbicide stacked varieties were planted at each location as a seed company entry or cooperating producer request.

Note: The previous version of this report included color grades representing an average of 3-replications with the exception of the Hutchinson County trial. Color grade averages were completed to show statistical significance between varieties, but because the values were an average, the reported average approximated a U.S. color grade. Color grades are a two digit number with the ones place (from 1-5) representing white, light spotted, spotted, tinged and yellow stained, respectively. More details about color grades for upland cotton can be found at: https://www.cottoninc.com/cotton-production/quality/us-cotton-fiber-chart/grades-of-us-cotton/

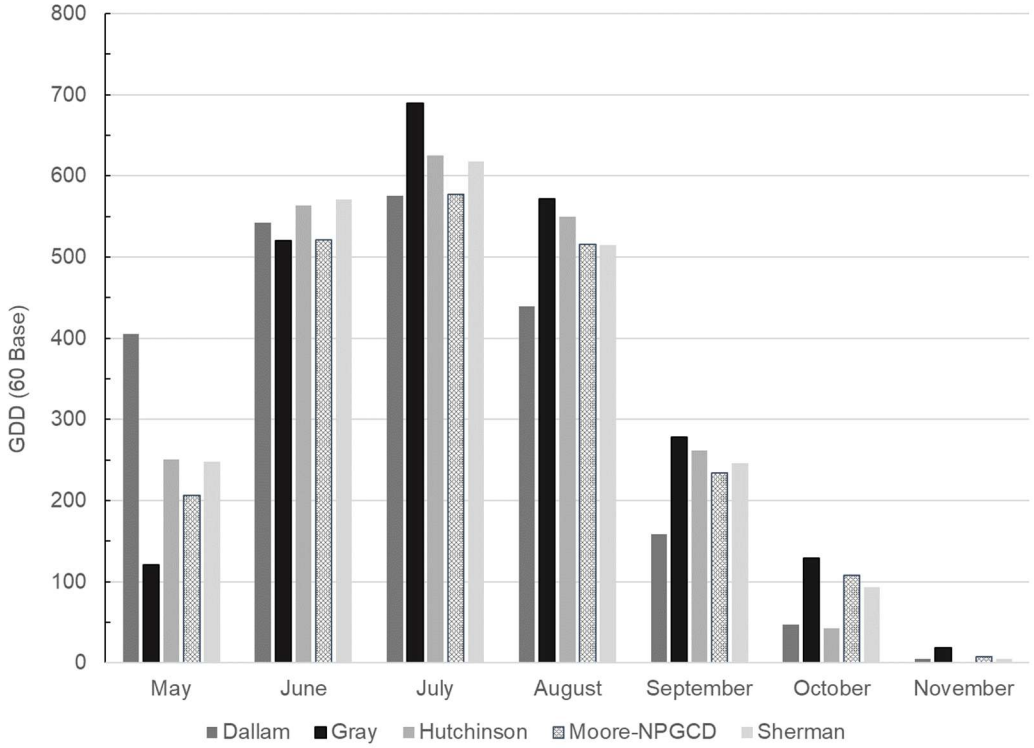

Figure 1. Monthly distribution of accumulated growing degree days (GDD60) from planting for locations where a Texas A&M AgriLife weather station is located.

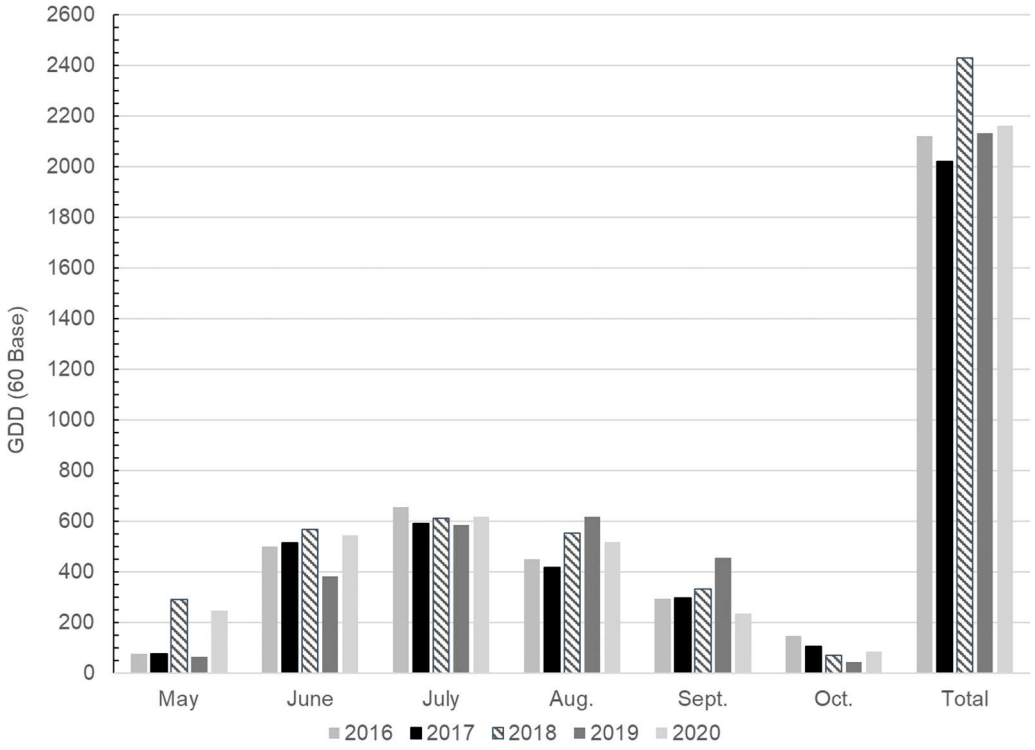

Figure 2. Five-year average growing degree days (GDD60) accumulated at Texas A&M AgriLife Panhandle RACE trial locations by production month and total seasonal accumulation.

Table 1. 2020 Agronomic information by location.

County	Dallam	Gray	Hansford	Hutchinson	Moore	Sherman	Sherman	Swisher
Location (Nearest Town)	Dallhart	Pampa	Spearman	Pringle	Etter	Gruver	Sunray	Kress
Cooperator	Jay Willard	Chandler Bowers	Quentin Shieldknight	Craig McCloy	NPGCD	Greg Slough	Tommy Cartrite	Jeremy Reed
County Agent(s)	Mike Bragg & Dennis Coker	Nick Simpson	Kristy Slough & Matt Whitely	Kristy Slough & Matt Whitely	Marcel Fischbacher & Dennis Coker	Kristy Slough & Matt Whitely	Marcel Fischbacher & Dennis Coker	-----
Irrigation	Irrigated	Irrigated	Dryland	Irrigated	Irrigated	Irrigated	Irrigated	Irrigated
In-season Precipitation (in.)*	13.03	8.01	13.79	13.79	14.20	13.39	----	----
Herbicide Technologies	Only XF	GL and XF	GL and XF	GL and XF	Only XF	GL and XF	Only XF	GL, XF, and E
Planting Date	5/15/2020	5/19/2020	5/2/2020	4/30/2020	5/6/2020	4/29/2020	5/4/2020	5/18/2020
Planting Pop. (Seeds/ac)	45,000	45,000	35,000	80,000	50,000	50,000	65,000	52,000
Soil Temp at Planting (°F) in Furrow	62	75	70	56	78	61	60	62
Harvest Date	11/19/2020	11/18/2020	10/6/2020	Partially Blown Out 11/17/2020	11/11/2020	11/9/2020	Hailed Out	Hailed Out
In-Season Conditions	Wind, Light Hail, Sept. Cold Front, Ice Storm	Wind and Sept. Cold Front, Ice Storm	Wind and Sept. Cold Front, Ice Storm	Wind and Sept. Cold Front, Ice Storm	Wind and Sept. Cold Front, Ice Storm	Wind, Light Hail, Sept. Cold Front, Ice Storm	Hailed Out	Hailed Out
Row Spacing (inches)	30	30	30	20	30	30	30	40
Varieties	DP1820 B3XF	DP1820 B3XF	DP1820 B3XF	DP1820 B3XF	DP1820 B3XF	DP1820 B3XF	DP1820 B3XF	DP1820 B3XF
ǂFarmer entry	----	----	DP1822 XF	----	----	----	----	----
	DP1908 B3XF	----	----	----	DP1908 B3XF	----	----	----
	----	----	DP1909 B3XF	----	----	----	----	----
	DP2012 B3XF	DP2012 B3XF	----	DP2012 B3XF	----	DP2012 B3XF	DP2012 B3XF	DP2012 B3XF
	----	----	DP2022B3XF	----	----	----	----	----
	----	FM1621 GL	FM1621 GL	FM1621 GL	----	FM1621 GL	----	FM1621 GL
	----	FM1888 GL	FM1888 GL	FM1888 GL	----	FM1888 GL	----	FM1888 GL
	----	----	FM2202 GL	----	----	----	----	----
	----	FM2398 GLTP	----	FM2398 GLTP	----	FM2398 GLTP	----	FM2398 GLTP
	NG2982 B3XF	NG2982 B3XF	NG2982 B3XF	NG2982 B3XF	NG2982 B3XF	NG2982 B3XF	NG2982 B3XF	NG2982 B3XF
	NG3500 XF	NG3500 XF	NG3500 XF	NG3500 XF	----	NG3500 XF	NG3500 XF	NG3500 XF
	NG3930 B3XF	NG3930 B3XF	NG3930 B3XF	NG3930 B3XF	NG3930 B3XF	NG3930 B3XF	NG3930 B3XF	NG3930 B3XF
	NG3956 B3XF	NG3956 B3XF	NG3956 B3XF	NG3956 B3XF	NG3956 B3XF	NG3956 B3XF	NG3956 B3XF	NG3956 B3XF
	ST4480 B3XF	ST4480 B3XF	ST4480 B3XF	ST4480 B3XF	----	ST4480 B3XF	ST4480 B3XF	ST4480 B3XF
	CP9210 B3XF	FM1320 GLǂ	DG3109 B2XFǂ	----	DG3385 B2XFǂ	DG3317 B3XFǂ	----	PHY350 W3FEǂ
	DP1612 B2XFǂ	----	DG3470 B3XFǂ	----	----	DG3470 B3XFǂ	----	PHY394 W3FEǂ
	NG3406 B2XFǂ	----	----	----	----	----	----	----

*Precipitation and GDD data from Texas A&M AgriLife weather stations located at the field with the exception of the Spearman/Hansford trial that used closest weather station.

Table 2. Characteristics of varieties evaluated in 2020 Panhandle RACE trials. All variety characteristics are obtained from company variety descriptions. Varieties represented in this table are entered by seed companies.

Variety	Maturity	Herbicide Package	Leaf Type	Storm Tolerance*	Plant Height	Mic	Vert.**	Bacterial Blight**
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	4	Med-Tall	3.4	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
FiberMax 1621 GL	Early	Glyphosate and Glufosinate	Semi-Hairy	6	Medium	4.2	Fair	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 2982 B3XF	Early	Glyphos., Glufos., and Dicamba	Semi-Smooth	9	Medium	4.0-4.2	Very Good	Very Tolerant
NexGen 3500 XF	Early-Med	Glyphos., Glufos., and Dicamba	Smooth	6	Med-Tall	3.7-4.6	Very Good	Very Tolerant
NexGen 3930 B3XF	Early-Med	Glyphos., Glufos., and Dicamba	Semi-Smooth	7	Med-Tall	4.1-4.5	Very Good	Very Tolerant
NexGen 3956 B3XF	Early-Med	Glyphos., Glufos., and Dicamba	Semi-Smooth	8	Med-Tall	4.3-4.7	Very Good	Very Tolerant
Stoneville 4480 B3XF	Early-Med	Glyphos., Glufos., and Dicamba	Semi-Smooth	6	Med	4.3	Resistant	Fair

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

All variety descriptions, rankings and characteristics provided by each seed company

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

	Dallam	Gray	Hansford	Hutchinson	Moore-NPGCD	Sherman-Cartrite	Sherman-Slough
Planted Seeds/Acre	45,000	45,000	35,000	80,000	50,000	50,000	65,000
	---- Measured plants/acre----						
AR9210 B3XF	26,281	-----	-----	-----	-----	-----	-----
DG3109 B2XF‡	----*	-----	17,134	-----	-----	-----	-----
DG3317 B3XF‡	-----	-----	-----	-----	-----	-----	30,202
DG3385 B2XF‡	-----	-----	-----	-----	28,532	-----	-----
DG3470 B3XF‡	-----	-----	18,731	-----	-----	28,895	-----
DP1612 B2XF‡	33,686	-----	-----	-----	-----	-----	-----
DP1820 B3XF	25,120	19,602	-----	37,897	22,216	22,796	28,867
DP1822 XF	-----	-----	26,354	-----	-----	-----	-----
DP1908 B3XF	28,750	-----	-----	-----	13,504	-----	-----
DP1909 B3XF	-----	-----	20,473	-----	-----	-----	-----
DP2012 B3XF	25,991	20,909	23,522	35,719	-----	20,183	31,799
FM1320 GL‡	-----	17,424	-----	-----	-----	-----	-----
FM1621 GL	-----	21,490	22,796	34,848	-----	-----	-----
FM1888 GL	-----	22,216	22,869	53,797	-----	-----	-----
FM2202 GL	-----	-----	20,909	-----	-----	-----	-----
FM2398 GLTP	-----	29,330	-----	47,045	-----	-----	-----
NG2982 B3XF	31,799	25,846	26,136	37,462	26,354	31,218	34,412
NG3406 B2XF‡	26,281	-----	-----	-----	-----	-----	-----
NG3500 XF	22,942	21,780	22,361	28,314	-----	15,682	31,073
NG3930 B3XF	31,218	29,621	26,136	53,143	30,492	25,730	40,366
NG3956 B3XF	30,202	22,216	25,846	49,005	25,918	21,490	34,993
ST4480 B3XF	25,120	18,586	22,216	39,204	-----	15,972	29,476
Trial Average	**27,944**	**22,638**	**22,729**	**41,643**	**24,503**	**22,746**	**32,648**
CV, %	11	10	8	18	20	30	11
p-value	0.0089	<0.0001	<0.0001	0.0056	0.0005	0.0675	0.0029
LSD	5,299	3,911	3,005	12,829	6,740	NS	6,520

*Varieties not planted at the respective location. ‡Farmer entry

Sherman County-Cartrite trial failed, but stand counts measured prior to crop termination. All locations (including Hutchinson County data) represents stand counts from all 3 replications. Measurements made at Hutchinson County before the June 9 wind storm.

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

	Dallam	Gray	Hansford	Hutchinson	Moore-NPGCD	Sherman-Cartrite	Sherman-Slough
Planted Seeds/Acre	**45,000**	**45,000**	**35,000**	**80,000**	**50,000**	**50,000**	**65,000**
	----- plants/acre as a % of planted seed-----						
AR9210 B3XF	0.58	-----	-----	-----	-----	-----	-----
DG3109 B2XF╪	-----	-----	0.49	-----	-----	-----	-----
DG3317 B3XF╪	-----	-----	-----	-----	-----	-----	0.46
DG3385 B2XF╪	-----	-----	-----	-----	0.57	-----	-----
DG3470 B3XF╪	0.75	-----	0.54	-----	-----	0.58	-----
DP1612 B2XF╪	0.56	0.44	-----	0.47	0.44	0.46	0.44
DP1820 B3XF	-----	-----	0.75	-----	-----	-----	-----
DP1822 XF	0.64	-----	-----	-----	0.27	-----	-----
DP1908 B3XF	-----	-----	0.58	-----	-----	-----	-----
DP1909 B3XF	0.58	0.46	0.67	0.45	-----	0.40	0.49
DP2012 B3XF	-----	0.39	-----	-----	-----	-----	-----
FM1320 GL╪	-----	0.48	0.65	0.44	-----	-----	-----
FM1621 GL	-----	0.49	0.65	0.67	-----	-----	-----
FM1888 GL	-----	-----	0.60	-----	-----	-----	-----
FM2202 GL	-----	0.65	-----	0.59	-----	-----	-----
FM2398 GLTP	0.71	0.57	0.75	0.47	0.53	0.62	0.53
NG2982 B3XF	0.58	-----	-----	-----	-----	-----	-----
NG3406 B2XF╪	0.51	0.48	0.64	0.35	-----	0.31	0.48
NG3500 XF	0.69	0.66	0.75	0.66	0.61	0.51	0.62
NG3930 B3XF	0.67	0.49	0.74	0.61	0.52	0.43	0.54
NG3956 B3XF	0.56	0.41	0.63	0.49	-----	0.32	0.45
ST4480 B3XF	0.62	0.50	0.65	0.52	0.49	0.45	0.50
Trial Average	**0.62**	**0.50**	**0.65**	**0.52**	**0.49**	**0.45**	**0.50**

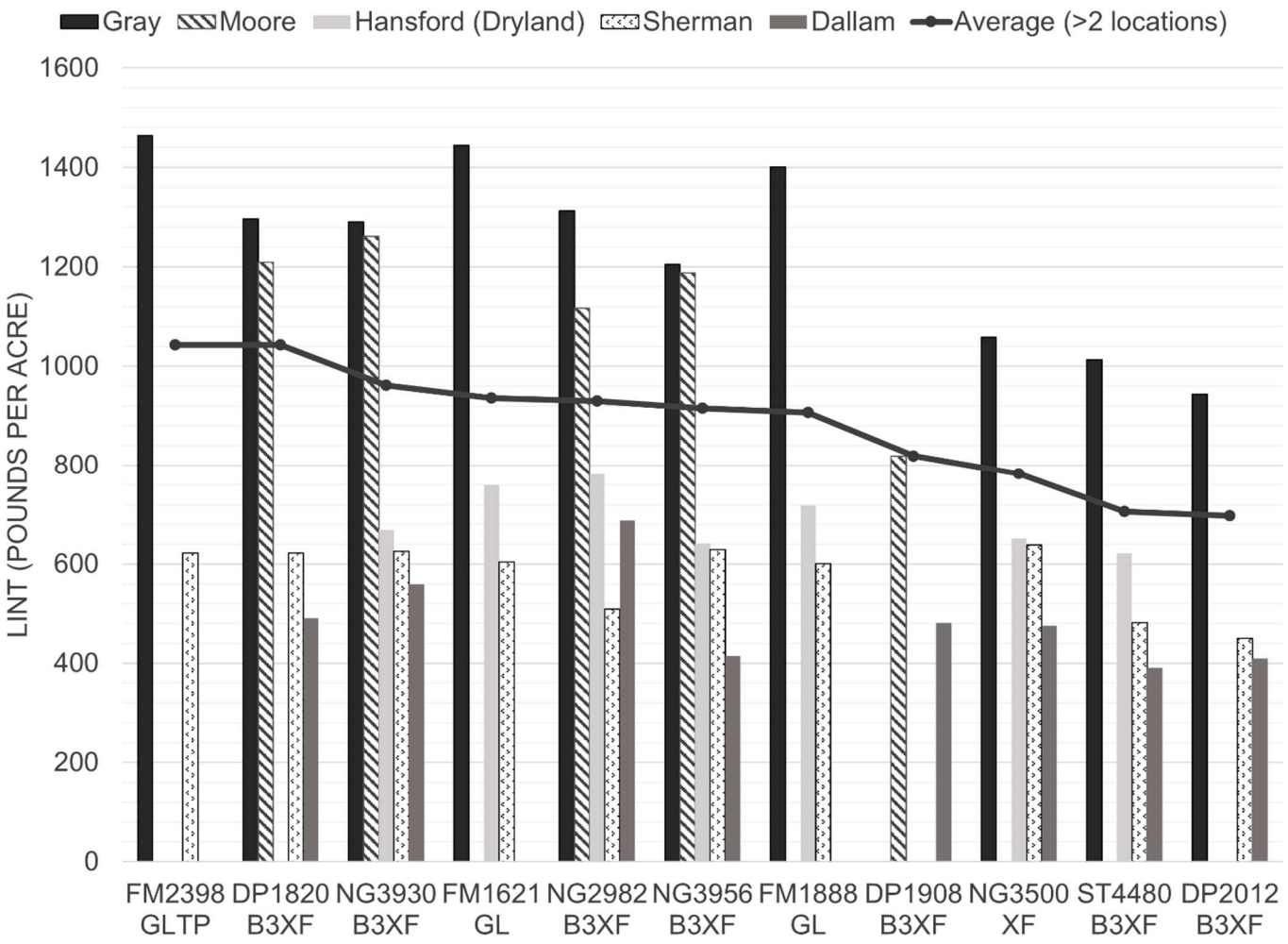

Figure 3. Lint yield from replicated trials representing varieties that are at two or more locations.

Table 5. 2020 Lint yield, quality, and value results from the Texas A&M AgriLife RACE Plots in Dallam County: Jay Willard Cooperator. Reported by maximum lint yield. Values significant at p<0.05. *farmer entry

Variety	Seed Cotton Yield --- lb/acre ---	Turnout --%--	Lint Yield --- lb/acre ---	Seed Yield --- lb/acre ---	Fiber Micro-naire	Fiber Length (in.)	Fiber Uniformity --%--	Fiber Strength (g/tex)	Leaf	Lint loan Value --cents/lb--	Lint Value --- $/acre ---	Seed Value --- $/acre ---
NG2982 B3XF	3396 a	0.20	688	910	2.26	1.06	80.0	28	3	33.83	232.67	91.01
DP1612 B2XF*	2643 b	0.24	623	815	2.49	1.09	80.0	27	2	33.28	207.04	81.53
NG3930 B3XF	2512 bc	0.22	559	733	2.24	1.11	79.5	28	1	34.20	195.57	73.35
AR9210 B3XF	2112 bcd	0.25	516	683	2.41	1.09	78.8	26	1	27.77	144.69	68.29
DP1820 B3XF	2288 bcd	0.21	491	642	2.23	1.08	78.2	26	1	28.93	141.92	64.19
DP1908 B3XF	2317 bcd	0.20	481	632	2.15	1.09	78.6	26	2	33.38	159.33	63.19
NG3500 XF	2366 bcd	0.20	475	629	2.24	1.05	78.7	26	2	29.38	138.70	62.86
NG3406 B2XF*	1927 d	0.22	433	566	2.17	1.04	78.7	26	2	25.42	109.40	56.58
NG3956 B3XF	1848 d	0.23	415	550	2.22	1.03	78.3	26	1	25.88	108.02	54.99
DP2012 B3XF	2024 cd	0.20	409	539	2.04	1.04	77.3	23	1	23.32	96.78	53.88
ST4480 B3XF	1998 cd	0.20	391	513	2.16	1.09	78.1	26	2	34.13	132.81	51.35
Test Average	**2312**	**0.22**	**498**	**656**	**2.24**	**1.07**	**78.7**	**26**	**2**	**29.96**	**151.54**	**65.56**
CV, %	15.2	9.1	17.5	17.6	4.3	1.9	0.9	5.3	37.7	8.3	18.3	17.6
p-value	0.0009	0.0594	0.0054	0.0056	0.0010	0.0004	0.0043	0.0217	0.0247	<0.0001	<0.0001	0.0056
LSD	583	NS	145	192	0.16	0.03	1.2	2.3	1.1	4.2	46.9	19.2

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 2020 Upland Cotton Loan Valuation Model from Cotton Incorporated using a $0.52/pound base.
Seed value calculated using 1.41 lbs seed/lb lint and $200/ton.

Table 6. 2020 Lint yield, quality, and value results from the Texas A&M AgriLife RACE Plots in Gray County: Chandler Bowers Cooperator. Reported by maximum lint yield. Values significant at p<0.05. *farmer entry

Variety	Seed Cotton Yield --- lb/acre ---	Turnout --%--	Lint Yield --- lb/acre ---	Seed Yield --- lb/acre ---	Fiber Micro-naire	Fiber Length (in.)	Fiber Uniformity --%--	Fiber Strength (g/tex)	Leaf	Lint loan Value cents/lb	Lint Value --- $/acre ---	Seed Value --- $/acre ---
FM2398 GLTP	4860 ab	0.30	1464	2067	3.53	1.13	81.0	28	2	56.05	820.82	206.69
FM1621 GL	4767 abc	0.30	1445	2040	3.38	1.14	81.4	30	5	47.98	692.26	203.99
FM1888 GL	4897 a	0.29	1401	1978	3.29	1.13	80.2	29	3	49.57	694.13	197.77
NG2982 B3XF	4743 abc	0.28	1313	1854	3.11	1.11	81.6	31	6	42.27	554.48	185.36
DP1820 B3XF	4354 cde	0.30	1296	1831	3.15	1.18	80.8	31	2	50.33	653.14	183.06
NG3930 B3XF	4711 abc	0.27	1291	1823	3.37	1.15	82.1	28	3	52.75	680.23	182.25
FM1320 GL*	4590 abc	0.27	1217	1719	3.12	1.10	80.5	30	3	48.28	587.47	171.86
NG3956 B3XF	4440 bcd	0.27	1205	1701	3.33	1.12	80.8	28	3	50.45	607.80	170.12
NG3500 XF	3934 ef	0.27	1058	1495	3.03	1.07	81.8	30	1	47.65	505.05	149.45
ST4480 B3XF	4108 de	0.25	1013	1004	2.84	1.16	80.8	30	2	46.93	475.52	100.39
DP2012 B3XF	3569 f	0.27	944	1293	2.47	1.13	80.3	28	2	40.85	385.71	129.26
Test Average	**4452**	**0.28**	**1241**	**1709**	**3.15**	**1.13**	**81.0**	**29**	**3**	**48.46**	**605.15**	**170.93**
CV, %	5.9	6.5	7.8	14.7	4.9	1.3	0.9	3.1	31.0	4.1	14.7	14.7
p-value	<0.0001	0.0144	<0.0001	0.0005	<0.0001	<0.0001	0.0418	0.0016	<0.0001	<0.0001	<0.0001	0.0005
LSD	434	0.03	159	413	0.26	0.02	1.2	1.5	1.5	3.3	145.3	41.3

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 2020 Upland Cotton Loan Valuation Model from Cotton Incorporated using a $0.52/pound base.
Seed value calculated using 1.41 lbs seed/lb lint and $200/ton.

Table 7. 2020 Lint yield, quality, and value results from the dryland Texas A&M AgriLife RACE Plots in Hansford: Quentin Shieldknight Cooperator. Reported by maximum lint yield. Values significant at p<0.05. *farmer entry

Variety	Seed Cotton Yield --- lb/acre ---	Turnout --%--	Lint Yield --- lb/acre ---	Seed Yield --- lb/acre ---	Fiber Micro-naire	Fiber Length (in.)	Fiber Uniformity --%--	Fiber Strength (g/tex)	Leaf	Lint loan Value cents/lb	Lint Value --- $/acre ---	Seed Value --- $/acre ---
FM2202 GL	1930 a	0.31	601	849	3.12	1.08	79.0	28	3	47.55	285.84	84.88
NG2982 B3XF	1895 ab	0.29	554	782	2.57	1.12	79.8	30	3	37.40	210.70	78.20
FM1621 GL	1735 bcd	0.31	538	759	3.00	1.09	77.2	27	3	44.78	240.18	75.95
FM1888 GL	1761 abc	0.28	509	719	2.88	1.08	77.3	27	4	43.30	220.48	71.87
DG3470 B3XF*	1546 e	0.31	485	684	3.39	1.03	78.5	27	1	46.23	224.16	68.45
DG3109 B2XF*	1569 de	0.30	479	676	3.07	1.09	78.9	29	4	45.83	206.72	67.61
NG3930 B3XF	1617 cde	0.29	474	669	2.72	1.08	77.6	25	2	39.88	189.31	66.91
NG3500 XF	1494 e	0.31	462	652	3.51	1.03	79.2	29	2	48.00	221.11	65.20
NG3956 B3XF	1675 cde	0.27	454	641	2.90	1.09	77.8	27	2	44.20	201.14	64.12
DP2012 B3XF	1594 cde	0.30	452	638	2.82	1.07	78.0	26	2	42.88	193.82	63.78
DP1909 B3XF	1589 cde	0.28	442	624	2.91	1.11	77.2	27	2	46.48	205.91	62.39
ST4480 B3XF	1626 cde	0.27	440	622	2.79	1.12	77.8	27	2	44.68	197.61	62.20
DP1822 XF	1557 de	0.29	429	606	2.86	1.11	77.1	27	1	44.20	189.01	60.60
Test Average	**1661**	**0.29**	**486**	**686**	**2.96**	**1.08**	**78.1**	**27**	**2**	**44.26**	**214.31**	**68.63**
CV, %	6.5	6.1	10.5	10.5	5.2	1.9	0.9	3.8	32.0	8.6	15.3	10.5
p-value	0.0011	0.0601	0.0368	0.0368	<0.0001	0.0002	0.0006	0.0006	0.0116	0.1189	0.2301	0.0368
LSD	182	NS	86	122	0.27	0.04	1.2	2	1.3	NS	NS	12.2

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 2020 Upland Cotton Loan Valuation Model from Cotton Incorporated using a $0.52/pound base.
Seed value calculated using 1.41 lbs seed/lb lint and $200/ton.

Table 8. 2020 Lint yield, quality, and value results from the Texas A&M AgriLife RACE Plots in Hutchinson County: Craig McCloy Cooperator. Due to severe wind injury, 2/3 of the field was terminated. Presented data is only from one replication on the north side of the field and sorted by maximum lint yield. Because reported data is not replicated, yield and quality do not reflect variety responses to variability across the field and between plots.

Variety	Seed Cotton Yield --- lb/acre ---	Turnout --%--	Lint Yield --- lb/acre ---	Seed Yield --- lb/acre ---	Micro-naire	Fiber Length (in.)	Uniformity --%--	Strength (g/tex)	Leaf	Lint loan Value cents/lb	Lint Value --- $/acre ---	Seed Value --- $/acre ---
FM2398 GLTP	4917	0.27	1349	1905	2.61	1.17	80.7	28.5	3	42.30	570.59	172.79
FM1888 GL	4477	0.28	1273	2395	2.53	1.12	79.5	30.0	3	41.70	531.00	163.00
NG3956 B3XF	4608	0.26	1194	1686	2.38	1.15	80.6	27.9	4	36.85	439.88	152.91
NG3930 B3XF	4475	0.25	1140	1609	2.27	1.14	78.5	27.6	3	37.30	425.06	145.97
FM1621 GL	3817	0.29	1114	1573	2.67	1.16	79.4	29.2	4	40.90	455.78	142.74
NG2982 B3XF	4127	0.26	1064	1502	2.08	1.13	80.3	30.3	5	34.45	366.42	136.24
DP1820 B3XF	4188	0.25	1055	1490	2.47	1.18	78.4	30.4	2	38.15	402.46	135.13
NG3500 XF	3934	0.26	1022	1444	2.64	1.11	80.8	28.7	2	42.30	432.47	130.96
DP2012 B3XF	3437	0.24	837	1182	2.09	1.11	77.9	25.6	2	34.10	285.45	107.23
ST4480 B3XF	3062	0.24	743	1049	2.13	1.14	77.9	27.9	4	35.80	266.02	95.18
Test Average	**4104**	**0.26**	**1079**	**1583**	**2.39**	**1.14**	**79.4**	**29**	**3**	**38.39**	**417.51**	**138.22**

Value for lint based on CCC loan value from grab samples and FBRI HVI results.
Lint loan value calculated from the 2020 Upland Cotton Loan Valuation Model from Cotton Incorporated using a $0.52/pound base.
Seed value calculated using 1.41 lbs seed/lb lint and $200/ton.

Table 9. 2020 Lint yield, quality, and value results from the Texas A&M AgriLife RACE Plots located at the North Plains Groundwater Conservation District's Water Conservation Center: Stan Spain cooperator. Reported by maximum lint yield. Values significant at p<0.05. *farmer entry

Variety	Seed Cotton Yield --lb/acre--	Turnout --%--	Lint Yield --- lb/acre ---	Seed Yield --- lb/acre ---	Micro-naire	Fiber Length (in.)	Uniformity --%--	Strength (g/tex)	Leaf	Lint loan Value --cents/lb--	Lint Value --- $/acre ---	Seed Value --- $/acre ---
DG3385 B2XF*	4434 bc	0.29	1279	2167	2.73	1.13	81.15	28.75	2	45.0	575.9	216.7
NG3930 B3XF	4584 ab	0.28	1262	2138	2.48	1.17	81.55	29.75	2	40.7	515.0	213.8
DP1820 B3XF	4257 c	0.28	1210	2050	2.89	1.18	80.60	30.00	3	47.7	576.7	205.0
NG3956 B3XF	4499 bc	0.26	1188	2013	2.64	1.15	79.90	29.05	4	43.8	519.8	201.3
NG2982 B3XF	4761 a	0.23	1116	1892	2.20	1.15	80.65	30.75	6	33.1	369.4	189.2
DP1908 B3XF	3705 d	0.22	819	1388	2.16	1.14	79.10	28.75	2	37.6	307.9	138.8
Test Average	**4373**	**0.26**	**1146**	**1941**	**2.52**	**1.15**	**80.5**	**30**	**3**	**41.31**	**477.47**	**194.10**
CV, %	4.2	4.1	4.1	4.1	7.1	1.2	0.8	2.7	22.4	6.8	8.4	4.1
p-value	<0.0001	<0.0001	<0.0001	<0.0001	0.0018	0.0056	0.0068	0.0529	<0.0001	0.0002	<0.0001	<0.0001
LSD	481	0.02	125	141	0.33	0.02	1.1	1.4	1.1	5.10	107.90	14.1

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 2020 Upland Cotton Loan Valuation Model from Cotton Incorporated using a $0.52/pound base.
Seed value calculated using 1.41 lbs seed/lb lint and $200/ton.

Table 10. 2020 Lint yield, quality, and value results from the Texas A&M AgriLife RACE Plots located in Sherman County: Greg Slough cooperator. Reported by maximum lint yield. Values significant at p<0.05. *farmer entry

Variety	Seed Cotton Yield --lb/acre--		Turnout --%--	Lint Yield --- lb/acre ---	Seed Yield --- lb/acre ---	Micro-naire	Fiber Length (in.)	Uniformity --%--	Strength (g/tex)	Leaf	Lint loan Value --cents/lb--	Lint Value --- $/acre ---	Seed Value --- $/acre ---
NG3500 XF	2018	a	0.32	639	902	4.18	1.03	81.5	29.7	2	51.63	331.00	81.79
NG3956 B3XF	2147	a	0.29	629	888	3.86	1.07	80.9	28.1	3	51.97	324.22	80.54
NG3930 B3XF	1987	a	0.32	626	884	3.98	1.07	81.3	27.7	2	53.85	337.12	80.17
DP1820 B3XF	1869	a	0.33	622	928	3.93	1.12	80.4	30.0	1	55.93	348.35	84.18
FM2398 GLTP	1879	a	0.33	622	878	4.17	1.08	80.8	28.2	1	54.00	335.67	79.69
FM1621 GL	1792	a	0.34	604	853	4.31	1.04	80.2	28.1	4	51.12	309.14	77.41
FM1888 GL	1923	a	0.31	600	848	3.88	1.06	79.7	28.3	3	52.87	317.49	76.91
DG3317 B3XF*	1712	a	0.30	512	723	3.95	1.04	81.2	28.1	2	51.85	266.57	65.63
NG2982 B3XF	1910	a	0.27	509	718	3.26	1.07	81.0	30.8	5	44.73	227.27	65.18
DG3470 B3XF*	1629	a	0.30	491	694	3.82	1.03	80.3	27.2	2	49.48	242.88	62.96
ST4480 B3XF	1699	a	0.28	482	680	3.74	1.11	80.4	29.1	2	54.23	260.37	61.73
DP2012 B3XF	1619	a	0.28	450	636	3.50	1.05	79.8	25.8	2	47.53	213.70	57.68
Test Average	**924**		**0.31**	**566**	**803**	**3.88**	**1.06**	**80.6**	**28**	**3**	**51.60**	**292.82**	**72.82**
CV, %	13.3		8.9	15.7	17.5	6.0	2.1	0.7	2.8	35.3	4.4	16.4	17.5
p-value	0.2457		0.0900	0.0843	0.1366	0.0006	0.0002	0.0113	<0.0001	0.0011	0.0003	0.0125	0.1379
LSD	NS		NS	NS	NS	0.42	0.04	1.1	1.4	1.6	4.1	86.6	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 2020 Upland Cotton Loan Valuation Model from Cotton Incorporated using a $0.52/pound base.

Seed value calculated using 1.41 lbs seed/lb lint and $200/ton.

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