



## **2020 Mixed Technology Cotton Variety Trial – Adobe Walls Gin**

**Tommy Cartrite Farm  
Sunray, TX**

**Dr. Randy Boman, Cotton Agronomics Manager – Windstar Inc.**

**Jerrell Key, Adobe Walls Gin Manager**

**Doug Kennedy, Assistant Manager**

### **Summary**

In 2019, a cotton variety testing program was established as a new service created by Windstar Inc. affiliated gins. These gins are working together to support a Cotton Agronomics Manager position. One of the components of this program is to work with local producers to scientifically evaluate varieties in a commercial on-farm setting from planting through ginning. These unique replicated trials are planted and harvested with the grower's commercial equipment. Each variety's round modules are combined across all replicates and then ginned and classed separately in an extremely detailed manner. Purging and weighing any remnant bale of from the press is also performed for each variety. All lint samples from each variety's commercial bales are then classed by the USDA-AMS classing office. This detailed ginning and classing management of all round modules for each variety is key to the success of this program and to the best of our knowledge is without peer in the U.S. ginning industry.

At this site in 2020, six varieties with XtendFlex technology, three varieties with Enlist technology, and one variety with Glytol-Liberty Link technology were planted in a center-pivot irrigated field in a scientifically valid trial with three replicates. *This trial was badly damaged by the June 9<sup>th</sup> regional high wind event, and much of the field in which it was planted was later replanted. Since the trial was planted in circular rows, those with a northwest-southeast orientation were essentially destroyed. It was decided that plants in the more east-west oriented rows were acceptable with respect to stand and plant health. These plot lengths varied from about 2200 ft to about 1500 ft. Although remaining plants were somewhat damaged and set back, the trial was able to stay on track with growth and development until the September 9<sup>th</sup> record low temperature. Growth was vigorous and plant heights among varieties became large by early bloom. Subsequent plant growth regulator applications were sufficient to check vegetative growth. By late July, widespread Verticillium wilt infection became obvious and this disease inflicted significant damage to plants by late September. The disease resulted in maturity challenges in the trial. Visually, the trial appeared to escape any damage associated with the cold spell, but the overall impact of these combined factors negatively affected maturity.*

Harvest results indicated that statistically significant differences were observed. Lint yields ranged from a high of 1185 lb/acre (PHY 210 W3FE) to a low of 652 lb/acre (ST 4480 B3XF), and averaged 949 lb/acre (Table 1). Average Loan value for varieties from commercially ginned and classed bales varied from a high of \$0.3655/lb (PHY 210 W3FE) to a low of \$0.2831/lb (NG 2982 B3XF). Overall Loan value for the trial across all entries was 0.3381/lb. When including lint Loan value on a per acre basis, net gin credit (defined as seed value minus ginning costs) and planting seed cost/acre, statistically significant differences were found among varieties for net value/acre. PHY 210 W3FE had the highest net value at \$383/acre, and ST 4480 B3XF had the lowest at \$137/acre.

Table 2 presents in-season data including stand establishment percentage, vigor, nodes above white flower (NAWF) and plant height on three sampling dates, nodes above cracked boll (NACB) on September 30, and a visual estimate of storm resistance. NACB values for most varieties were very high on September 30, and averaged 6.0. This indicates that a considerable number of unopened bolls were being pushed into October to gain additional maturity. Verticillium wilt disease impact on the plants was very obvious when the NACB count was determined. Therefore, a visual estimate of Verticillium wilt infected plants was also performed. The high amount of variability in the disease symptomology made this visual estimate difficult to evaluate. Across all entries where visual estimates were conducted, approximately 50% of plants were expressing some level of Verticillium wilt symptomology. Some varieties such as ST 4480 B3XF and FM 1621 GL were observed to have approximately 70-75% of plants expressing symptomology. This high level of disease likely highly negatively impacted the ST 4480 B3XF as can be seen in the extremely low yield (652 lb/acre) of this entry. Although the FM 1621 GL symptoms were very frequent, that entry was still able to produce 1065 lb/acre of lint yield.

Table 3 provides the USDA-AMS classing results from each commercial bale for each variety and the variety averages. Low yield and fairly small harvested plot size resulted in only a few bales being produced by some entries such as ST 4480 B3XF. Averages of commercial bales for each variety indicate that color grades were typically 31 or 41 across entries. Leaf grades ranged from about 3.7 to 6.2. NexGen 2982 B3XF had the lowest leaf grade quality, with commercial bales classed as leaf grades 6 and 7, with an average of 6.2. Staple ranged from an average high of 36.8 (DP 1820 B3XF) to an average low of 34.8 32<sup>nds</sup> inch (several entries). Micronaire was apparently significantly affected by the September 9 cold spell and high Verticillium wilt infection rate. Average micronaire values ranged from a high of 2.7 (DP 2020 B3XF and NG 3930 B3XF) to a low of 2.4 (PHY 250 W3FE). Significant bark contamination was noted in commercial bales. Bark incidence ranged from a low of 33% of bales (PHY 210 W3FE) to a high of 100% (NG 2982 B3XF and ST 4480 B3XF). Fiber strength ranged from a high of 28.7 g/tex (PHY 210 W3FE) to a low of 25.7 g/tex (DP 2012 B3XF). Uniformity ranged from a high of 77.9% to a low of about 76.2%.

***Disclaimer: Readers should realize that results from one trial do not represent conclusive evidence that the same response would occur where conditions vary. Multi-site and multi-year data are always best. For this trial, good scientific techniques were used and the results are presented to indicate what actually occurred in the trial. Context of the environment, overall growing season impact, management techniques, and trial methodology used are important and must be considered.***

## Site Information and Methods

Elevation: 3455 ft

Previous crop: corn in 2019

Tillage system: disk of residue, strip-till

Planted: May 2

Replicates: 3 replicates in a randomized complete block design

Plot width: 8-row plots

Plot length: trial was planted in circular rows; ~2,200 ft for long rows and ~1500 ft for short rows

Seeding rate: 65,000 seed/acre

Days from planting to first bloom: 72 (July 15)

30-inch rows under center pivot irrigation

Total rainfall May through September: ~7.8 inches

February 0.17, March 1.01, April 2.5, May 1.34, June 0.52, July 1.96, August 2.29,  
September 1.73, October 1.2

Total irrigation April through September: ~13.45 inches

April 2.25, May 1.20, June 2.25, July 3.5, August 3.5, September 0.75

Fertility management: No nitrogen fertilizer applied; 11.4 gal/acre of 11-23-0-8S in April strip-till

Chemical Applications:

Preplant burndown – 1 oz/acre Zoltus + 8 oz/acre dicamba on April 16

Preemergence – 2.5 pt/acre Warrant (acetochlor)

Post emergence – 15 oz/acre Select Max (clethodim) + 1 qt/acre Cornerstone (glyphosate) + 17 lb/100 gal AMS on May 26

Post emergence – 43 oz/acre Liberty on July 1

Post emergence – 43 oz/acre Liberty + 2 qt/acre glyphosate + 17 lb/100 gal AMS + 1 pt/acre Outlook on July 15

Post emergence – 8 oz/acre clethodim on July 25

Plant growth regulators: 20 oz/acre Mepex (mepiquat chloride) July 25; 20 oz/acre Mepex August 5; 20 oz/acre Mepex August 14

Insecticides: 5 oz/acre Bracket 97 (acephate) on May 26 and again on June 8

Harvest aid application: 1.5 qt/acre ethephon (Superboll) on October 14

Harvesting: November 20 (replicates 1 and 2) and November 22 (replicate 3) using a John Deere CS690, with harvested area calculated by the GPS on the stripper monitor. Entire plot length was harvested with 1 round module harvested/plot. Round modules were weighed using the CS690 scale, and all round modules from individual plots were weighed at the Adobe Walls Gin.

Commercial ginning: Round modules for all 3 reps of each variety were staged together (1 per plot, with 3 reps = 3 total per variety) and commercially ginned separately by Adobe Walls Gin. Commercial ginning included: cleaning module feeder, clearing gin stream, dumping seed rolls, and purging remnant bale in press. This process was initiated before the first variety module was ginned and then repeated for each variety module in trial.

Remnants were ejected from the bale press and weighed, but not sampled for USDA-AMS classing. Only data from commercial bales are included in classing data for each variety.

Lint value: Table 1 is based on CCC Loan value from commercial ginning and USDA-AMS classing results.

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### **Acknowledgements**

Adobe Walls Gin would like to thank Tommy Cartrite for committing equipment, land, and time to conduct and manage the trial. Ramon Gonzalez performed harvest plot length measurement operations and we appreciate his excellent assistance. Gratitude is expressed to participating seed companies for providing testing seed. These include Deltapine, FiberMax, NexGen, PhytoGen and Stoneville. Gratitude is also expressed to Windstar Inc. Detailed ginning was performed by the Adobe Walls crew and a big thank you is extended to this hard-working group.



## 2020 Mixed Technology Trial Variety Descriptions – Adobe Walls Gin

Tommy Cartrite Farm  
Sunray, TX

Dr. Randy Boman  
Cotton Agronomics Manager

### Variety Descriptions from Company Literature and Websites

**DP 1820 B3XF** Roundup Ready Flex (glyphosate), Liberty Link (glufosinate), and dicamba stacked herbicide tolerance technologies stacked with Bollgard 3 Bt technology. Early-medium maturity. Semi-smooth leaves, medium-tall plant height, storm resistance 3.5 (on scale of 1 = tight, 9 = loose). ~ 39 staple, strength ~30.6 g/tex. Disease ratings: Fusarium wilt – moderately susceptible, Verticillium wilt – moderately susceptible, Bacterial blight – resistant.

**DP 2012 B3XF** Roundup Ready Flex (glyphosate), Liberty Link (glufosinate), and dicamba stacked herbicide tolerance technologies. Early maturity. Smooth leaves, medium to medium-tall plant height, storm resistance 3.5 (on scale of 1 = tight, 9 = loose). ~ 38 staple, strength ~31.3 g/tex. Disease ratings: Fusarium wilt – no data, Verticillium wilt – moderately tolerant, Bacterial blight – resistant.

**DP 2020 B3XF** Roundup Ready Flex (glyphosate), Liberty Link (glufosinate), and dicamba stacked herbicide tolerance technologies. Early-medium maturity. Semi-smooth leaves, medium to medium-tall plant height, storm resistance 3.5 (on scale of 1 = tight, 9 = loose). ~ 37.7 staple, strength ~30.3 g/tex. Disease ratings: Fusarium wilt – no data, Verticillium wilt – moderately tolerant, Bacterial blight – resistant.

**FM 1621 GL** GlyTol (glyphosate) and Liberty Link (glufosinate) stacked herbicide tolerance technologies. Early maturity. Semi-hairy leaves, medium/moderate plant height, storm resistance 6 (on scale of 9 = tight, 0 = loose). ~ 37 staple, strength ~32 g/tex. Disease ratings: Fusarium wilt – good, Verticillium wilt – fair, Bacterial blight - resistant.

**NG 2982 B3XF** Roundup Ready Flex (glyphosate), Liberty Link (glufosinate), and dicamba stacked herbicide tolerance technologies stacked with Bollgard 3 Bt technology. Early maturity. Storm tolerance 9 (scale of 0 = very loose, 9 = very storm tolerant), leaf hair semi-smooth, plant height medium, node of first fruiting branch (avg) 7, staple 36-37, strength 31-33. Diseases (on scale of 0 very susceptible, 9 superior resistance): Fusarium wilt - no data, Verticillium wilt 7, Bacterial blight 9.

**NG 3930 B3XF** Roundup Ready Flex (glyphosate), Liberty Link (glufosinate), and dicamba stacked herbicide tolerance technologies stacked with Bollgard 3 Bt technology. Early-Medium maturity. Storm tolerance 7 (scale of 0 = very loose, 9 = very storm tolerant), leaf hair semi-smooth, plant height medium-tall, node of first fruiting branch (avg) 6.7, staple 37-38, strength 29-30. Diseases (on scale of 0 very susceptible, 9 superior resistance): Fusarium wilt - no data, Verticillium wilt 7, Bacterial blight 8.

**PHY 210 W3FE** Enlist Technology: Widestrike 3 Bt technology stacked with triple herbicide technologies including Roundup Ready Flex (glyphosate) tolerance, Liberty Link (glufosinate), and Enlist herbicide (2,4-D choline) tolerance. Early maturity. Short growth habit. Smooth leaf, storm tolerance - excellent. Bacterial blight - resistant. Verticillium wilt - excellent. ~36.8 staple, ~31.3 g/tex strength.

**PHY 250 W3FE** Enlist Technology: Widestrike 3 Bt technology stacked with triple herbicide technologies including Roundup Ready Flex (glyphosate) tolerance, Liberty Link (glufosinate), and Enlist herbicide (2,4-D choline) tolerance. Early maturity. Short growth habit. Smooth leaf, storm tolerance - excellent. Bacterial blight - resistant. Verticillium wilt - excellent. ~37.1 staple, ~31.1 g/tex strength.

**PHY 350 W3FE** Enlist Technology: Widestrike 3 Bt technology stacked with triple herbicide technologies including Roundup Ready Flex (glyphosate) tolerance, Liberty Link (glufosinate), and Enlist herbicide (2,4-D choline) tolerance. Early-mid maturity. Medium-tall plant height. Semi-smooth leaf, storm tolerance – very good. Bacterial blight - resistant. Verticillium wilt - excellent. Root knot nematode – highly resistant. ~36.8 staple, ~30.0 g/tex strength.

**ST 4480 B3XF** Roundup Ready Flex (glyphosate), Liberty Link (glufosinate), and dicamba stacked herbicide tolerance technologies. Early-medium maturity. Semi-smooth leaves, medium plant height, storm resistance 6 (on scale of 0 = very loose, 9 = very storm tolerant). ~ 37.7 staple, strength ~31.1 g/tex. Disease ratings: Root knot nematode/Fusarium wilt – fair, Verticillium wilt – fair, Bacterial blight – resistant.



Table 1. Harvest results for the center pivot irrigated mixed technology cotton variety trial, Cartrite Farm, Sunray, TX, 2020.

Entry	Lint turnout	Seed turnout	Bur cotton yield	Lint yield	Seed yield	Lint loan value	Lint loan value	Net gin credit	Seed/tech cost	Net value	
	----- % -----		----- lb/acre -----			\$/lb		----- \$/acre -----			
PHY 210 W3FE	27.1	43.7	4367	1185	1908	0.3655	433	63	113	383	a
FM 1621 GL	29.0	39.5	3678	1065	1452	0.3175	338	37	74	301	b
NG 3930 B3XF	26.5	41.2	4050	1073	1670	0.3320	356	48	105	299	b
DP 2020 B3XF	25.2	41.2	3644	917	1503	0.3730	342	43	116	269	c
DP 1820 B3XF	27.5	37.2	3603	993	1340	0.3510	349	27	116	259	c
DP 2012 B3XF	25.5	39.1	3566	910	1395	0.3348	305	34	116	222	d
PHY 250 W3FE	26.5	35.8	3757	996	1346	0.3083	307	23	113	217	d
PHY 350 W3FE	23.9	36.9	3290	785	1215	0.3539	278	24	113	189	e
NG 2982 B3XF	24.9	43.4	3690	917	1602	0.2831	260	52	126	185	e
ST 4480 B3XF	23.4	33.9	2794	652	947	0.3623	237	11	111	137	f
Test average	25.9	39.2	3644	949	1438	0.3381	321	36	110	246	
CV, %	--	--	3.6	3.5	3.5	--	3.8	3.5	--	5.4	
OSL	--	--	0.0001	0.0001	0.0001	--	0.0001	0.0001	--	0.0001	
LSD	--	--	184	47	70	--	17	2	--	19	

For net value/acre, means within a column with the same letter are not significantly different.

CV - coefficient of variation.

OSL - observed significance level, or probability of a greater F value.

LSD - least significant difference at the 0.10 level, NS - not significant.

Note: some columns may not add up due to rounding error.

Assumes:

\$3.15/cwt commercial ginning cost.

\$210/ton for seed.

Net gin credit is defined as seed credit minus ginning expense.

Value for lint based on CCC loan value from commercial ginning and USDA-AMS classing results.



Table 2. Plant observation results from the center pivot irrigated mixed technology cotton variety trial, Cartrite Farm, Sunray, TX, 2020.

Entry	Final population	Stand establishment	Vigor	Nodes above white flower			Plant height			Nodes above cracked boll	Verticillium wilt infected plants	Storm resistance
				Early bloom	+2 weeks	+4 weeks	Early bloom	+2 weeks	+4 weeks			
	plants/acre 11-Jun	% 11-Jun	1-5 visual scale, 5 best 11-Jun	count			inches			count 30-Sep	% visual estimate 30-Sep	1-9 visual scale, 9 best 20-Nov
				28-Jul	13-Aug	27-Aug	28-Jul	13-Aug	27-Aug			
DP 1820 B3XF	29,621	45.6	3.0	10.0	6.0	2.4	33.3	35.5	35.7	6.8	53	4.2
DP 2012 B3XF	40,366	62.1	3.3	10.1	6	2.3	32.0	35.7	35.1	6.7	47	4.8
DP 2020 B3XF	43,560	67.0	3.5	9.7	6.3	2.4	32.1	35.5	35.8	7.2	53	4.0
FM 1621 GL	40,656	62.5	3.8	9.9	6.1	2.1	28.1	32.4	32.2	6.5	70	5.8
NG 2982 B3XF	38,042	58.5	3.7	9.3	6.4	2.1	28.2	33.1	31.7	6.2	63	6.7
NG 3930 B3XF	38,333	59.0	3.7	9.5	5.6	2.1	30.9	34.1	33.9	5.3	37	4.7
PHY 210 W3FE	36,300	55.8	3.7	8.5	5.5	1.6	25.7	28.3	27.0	5.4	40	7.0
PHY 250 W3FE	38,042	58.5	3.7	8.7	4.8	1.5	26.2	29.5	29.2	4.4	43	5.8
PHY 350 W3FE	36,300	55.8	3.3	9.3	6.1	2.1	32.5	34.9	33.7	5.5	43	4.0
ST 4480 B3XF	33,106	50.9	3.2	10.6	6.1	2.5	28.9	31.3	32.6	6.4	73	5.8
Test average	37,433	57.6	3.5	9.6	5.9	2.1	29.8	33.0	32.7	6.0	52	5.3
CV, %	9.2	9.2	11.9	4.0	6.4	17.7	4.4	3.1	3.7	9.2	8.1	4.4
OSL	0.0065	0.0064	0.3297	0.0001	0.0002	0.0540	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001
LSD	4,882	7.5	NS	0.5	0.5	0.5	1.8	1.4	1.7	0.8	6	0.3

CV - coefficient of variation.

OSL - observed significance level, or probability of a greater F value.

LSD - least significant difference at the 0.10 level.



Table 3. Commercial classing data for the center pivot irrigated mixed technology cotton variety trial, Cartrite Farm, Sunray, TX, 2020.

Variety and Bale Number	Color Grade-Quadrant grade-quadrant	Color digit 1	Color digit 2	Leaf grade	Staple 32nds inch	Micronaire units	Extraneous matter	Remarks --	Strength g/tex	Rd %	+b %	Trash % area	Uniformity %	Length 100ths inch	Loan rate cents/lb
<b>DP 1820 B3XF</b>															
9078078	31-1	3	1	4	37	2.5	11	level 1 bark	27.5	79.9	7.4	6	77.7	117	36.10
9078079	31-1	3	1	4	36	2.4	11	level 1 bark	30.6	78.8	7.6	6	77.3	113	31.65
9078080	31-1	3	1	4	37	2.4	11	level 1 bark	27.1	78.6	7.7	5	78.5	117	32.15
9078081	31-1	3	1	4	37	2.5	11	level 1 bark	28.2	80.4	7.6	5	77.0	115	36.10
9078082	31-1	3	1	4	37	2.5	.	.	28.3	79.7	7.8	4	76.8	114	39.50
Average	--	3.0	1.0	4.0	36.8	2.5	4/5 bales	level 1 bark	28.3	79.5	7.6	5.2	77.5	115.2	35.10
<b>DP 2012 B3XF</b>															
9078113	31-1	3	1	4	35	2.5	11	level 1 bark	26.3	80.0	7.4	5	76.9	110	34.80
9078114	31-1	3	1	4	34	2.3	11	level 1 bark	26.6	79.7	7.8	5	76.5	107	29.65
9078115	31-1	3	1	4	36	2.6	11	level 1 bark	24.2	80.3	7.9	5	77.0	111	32.65
9078116	21-2	2	1	3	34	2.5	.	.	26.0	80.5	7.6	3	77.4	107	38.20
9078117	31-1	3	1	4	35	2.5	11	level 1 bark	25.4	80.3	7.9	5	76.0	108	32.10
Average	--	2.8	1.0	3.8	34.8	2.5	4/5 bales	level 1 bark	25.7	80.2	7.7	4.6	76.8	108.6	33.48
<b>DP 2020 B3XF</b>															
9078099	31-1	3	1	4	36	3.3	11	level 1 bark	26.5	79.4	8.1	4	77.6	112	45.15
9078100	31-1	3	1	4	36	2.7	11	level 1 bark	27.1	78.4	8.0	5	77.9	111	40.75
9078101	31-1	3	1	4	34	2.4	.	.	26.1	80.1	7.8	5	75.7	107	33.05
9078102	21-2	2	1	4	36	2.6	11	level 1 bark	25.4	79.6	8.2	5	76.5	113	33.85
9078103	21-1	2	1	3	36	2.4	.	.	25.1	80.6	8.0	4	75.7	111	33.70
Average	--	2.6	1.0	3.8	35.6	2.7	3/5 bales	level 1 bark	26.0	79.6	8.0	4.6	76.7	110.8	37.30



Table 3 (continued). Commercial classing data for the center pivot irrigated mixed technology cotton variety trial, Cartrite Farm, Sunray, TX, 2020.

Variety and Bale Number	Color Grade-Quadrant grade-quadrant	Color digit 1	Color digit 2	Leaf grade	Staple 32nds inch	Micronaire units	Extraneous matter	Remarks --	Strength g/tex	Rd %	+b %	Trash % area	Uniformity %	Length 100ths inch	Loan rate cents/lb
<b>FM 1621 GL</b>															
9078083	41-1	4	1	5	37	2.6	11	level 1 bark	28.5	78.2	7.1	7	79.1	115	33.90
9078084	41-1	4	1	6	35	2.5	11	level 1 bark	27.9	76.6	7.2	9	77.4	110	29.85
9078085	41-1	4	1	5	36	2.4	11	level 1 bark	27.2	75.3	7.7	7	77.8	113	28.80
9078086	31-2	3	1	5	36	2.5	11	level 1 bark	28.5	77.9	7.4	8	77.1	113	34.20
9078087	31-2	3	1	5	36	2.4	.	.	30.1	77.9	7.5	6	77.4	111	33.40
9078088	31-2	3	1	5	37	2.4	11	level 1 bark	27.7	78.7	7.3	8	78.7	115	30.35
Average	--	3.5	1.0	5.2	36.2	2.5	5/6 bales	level 1 bark	28.3	77.4	7.4	7.5	77.9	112.8	31.75
<b>NG 2982 B3XF</b>															
9078118	41-1	4	1	6	35	2.5	11	level 1 bark	29.1	77.9	6.8	12	79.4	109	30.50
9078119	41-2	4	1	7	34	2.7	11	level 1 bark	28.0	75.1	6.8	10	77.4	106	33.15
9078120	41-1	4	1	6	35	2.4	11	level 1 bark	27.8	76.1	7.1	9	78.8	110	25.90
9078121	41-1	4	1	6	35	2.4	11	level 1 bark	28.6	75.9	6.8	9	79.2	110	26.00
9078122	41-1	4	1	6	35	2.4	11	level 1 bark	28.6	75.9	6.8	9	79.2	110	26.00
Average	--	4.0	1.0	6.2	34.8	2.5	5/5 bales	level 1 bark	28.4	76.2	6.9	9.8	78.8	109.0	28.31
<b>NG 3930 B3XF</b>															
9078093	31-2	3	1	5	36	2.5	11	level 1 bark	26.8	78.0	7.4	8	78.1	113	34.70
9078094	31-2	3	1	4	35	2.4	11	level 1 bark	27.9	77.2	8.0	6	76.3	109	30.35
9078095	31-1	3	1	4	36	2.4	11	level 1 bark	28.6	77.7	7.9	6	77.2	112	31.40
9078096	31-1	3	1	4	37	2.5	11	level 1 bark	25.6	77.8	8.0	5	77.8	115	33.40
9078097	31-1	3	1	4	36	2.5	21	level 1 grass	26.2	78.4	7.9	5	77.0	111	34.55
9078098	31-1	3	1	4	36	2.4	.	.	27.0	79.0	7.9	4	77.4	113	34.80
Average	--	3.0	1.0	4.2	36.0	2.5	5/6 bales	5 level 1 bark 1 level 1 grass	27.0	78.0	7.9	5.7	77.3	112.2	33.20



Table 3 (continued). Commercial classing data for the center pivot irrigated mixed technology cotton variety trial, Cartrite Farm, Sunray, TX, 2020.

Variety and Bale Number	Color Grade-Quadrant grade-quadrant	Color digit 1	Color digit 2	Leaf grade	Staple 32nds inch	Micronaire units	Extraneous matter	Remarks --	Strength g/tex	Rd %	+b %	Trash %	Uniformity %	Length 100ths inch	Loan rate cents/lb
<b>PHY 210 W3FE</b>															
9078107	31-1	3	1	4	36	2.6	.	.	29.1	80.6	7.0	4	76.9	112	39.30
9078108	31-1	3	1	4	36	2.5	11	level 1 bark	30.2	79.9	7.2	5	77.5	113	36.10
9078109	31-2	3	1	4	35	2.4	11	level 1 bark	27.7	79.2	7.4	5	78.1	109	30.85
9078110	31-1	3	1	3	35	2.5	.	.	29.3	80.3	7.6	3	77.5	108	39.30
9078111	31-1	3	1	4	35	2.4	.	.	28.0	80.8	7.5	5	78.4	110	34.25
9078112	21-2	2	1	3	35	2.5	.	.	27.6	81.7	7.2	3	77.9	109	39.50
Average	--	2.8	1.0	3.7	35.3	2.5	2/6 bark	level 1 bark	28.7	80.4	7.3	4.2	77.7	110.2	36.55
<b>PHY 250 W3FE</b>															
9078072	41-1	4	1	4	36	2.4	11	level 1 bark	29.3	79.1	6.6	6	77.0	112	30.55
9078073	31-2	3	1	4	34	2.4	11	level 1 bark	28.1	79.4	7.3	5	77.5	106	29.65
9078074	31-1	3	1	4	35	2.4	.	.	26.9	78.5	7.7	5	77.6	109	33.75
9078075	31-1	3	1	5	34	2.4	11	level 1 bark	28.9	78.5	7.5	7	76.9	107	27.85
9078076	31-1	3	1	3	34	2.5	11	level 1 bark	26.7	79.9	7.2	4	74.9	107	34.45
9078077	31-1	3	1	4	36	2.3	11	level 1 bark	25.2	79.7	7.4	5	77.4	112	28.70
Average	--	3.2	1.0	4.0	34.8	2.4	5/6 bales	level 1 bark	27.5	79.2	7.3	5.3	76.9	108.8	30.83



Table 3 (continued). Commercial classing data for the center pivot irrigated mixed technology cotton variety trial, Cartrite Farm, Sunray, TX, 2020.

Variety and Bale Number	Color Grade-Quadrant grade-quadrant	Color digit 1	Color digit 2	Leaf grade	Staple 32nds inch	Micronaire units	Extraneous matter	Remarks --	Strength g/tex	Rd %	+b %	Trash %	Uniformity %	Length 100ths inch	Loan rate cents/lb
<b>PHY 350 W3FE</b>															
9078089	21-2	2	1	4	36	2.5	11	level 1 bark	25.6	79.5	8.4	5	77.1	111	33.85
9078090	31-1	3	1	4	36	2.6	11	level 1 bark	26.6	79.4	7.6	5	77.2	112	35.85
9078091	31-1	3	1	4	36	2.5	11	level 1 bark	25.9	78.7	7.7	4	78.7	111	33.65
9078092	31-1	3	1	4	35	2.5	.	.	27.2	77.9	8.1	5	76.1	110	38.20
Average	--	2.8	1.0	4.0	35.8	2.5	3/4 bales	level 1 bark	26.3	78.9	8.0	4.8	77.3	111.0	35.39
<b>ST 4480 B3XF</b>															
9078104	31-1	3	1	4	35	2.6	11	level 1 bark	25.4	79.6	7.3	5	75.8	109	32.10
9078105	31-1	3	1	4	36	2.8	11	level 1 bark	26.3	80.6	6.8	6	75.9	111	40.75
9078106	31-1	3	1	4	36	2.5	11	level 1 bark	26.7	81.2	6.9	6	77.0	111	35.85
Average	--	3.0	1.0	4.0	35.7	2.6	3/3 bales	level 1 bark	26.1	80.5	7.0	5.7	76.2	110.3	36.23

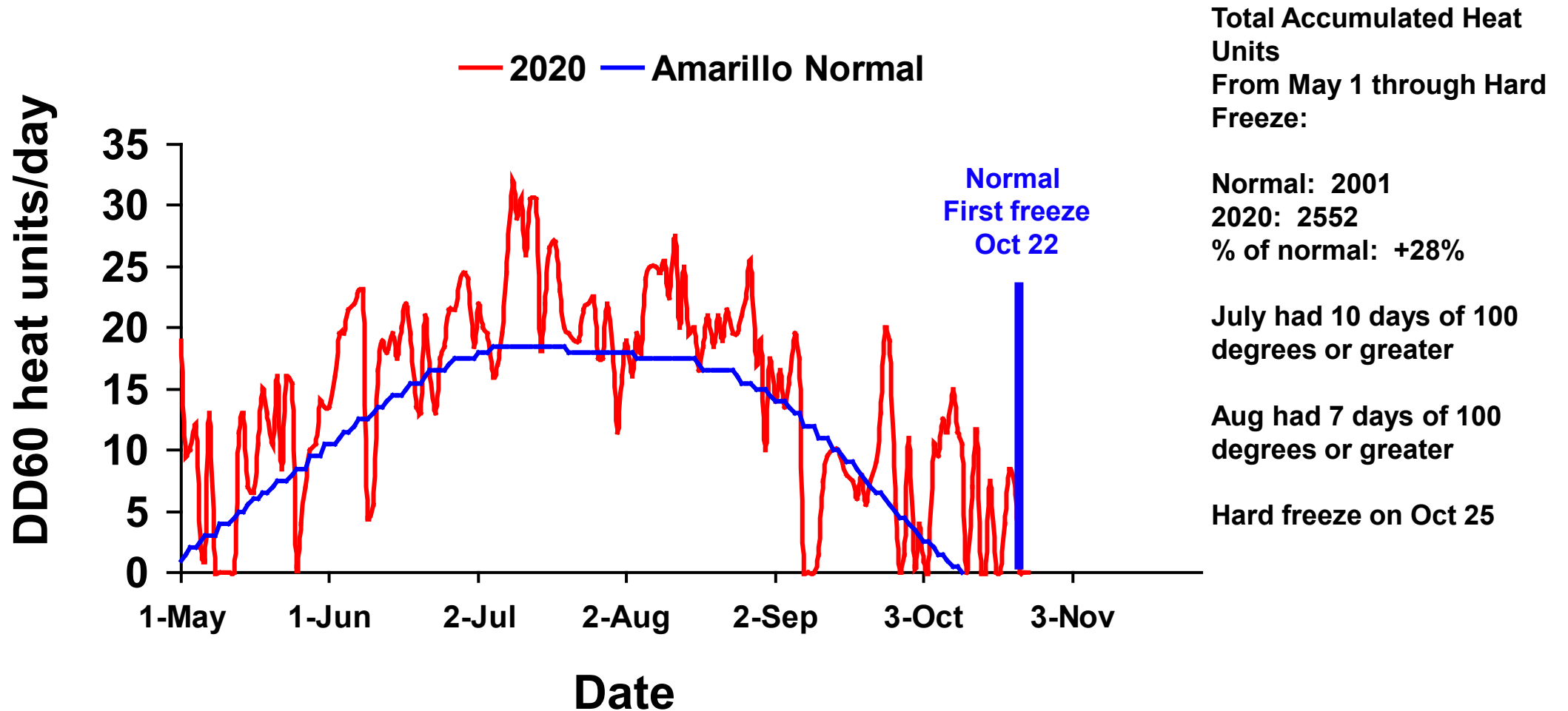


# Appendix

## **Amarillo 2020 Cotton Heat Units and Weather Data**

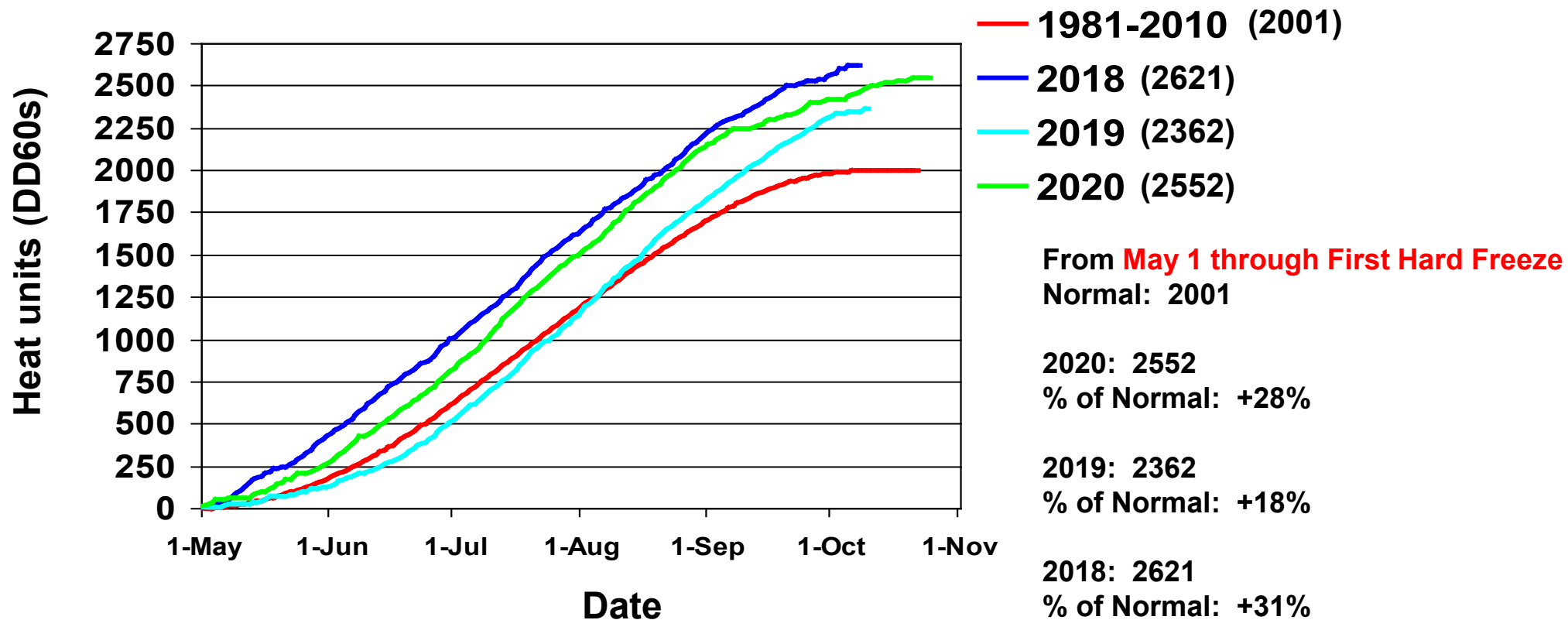
# Amarillo

## 30-Year Normal (1981-2010) and 2020 Daily Heat Units



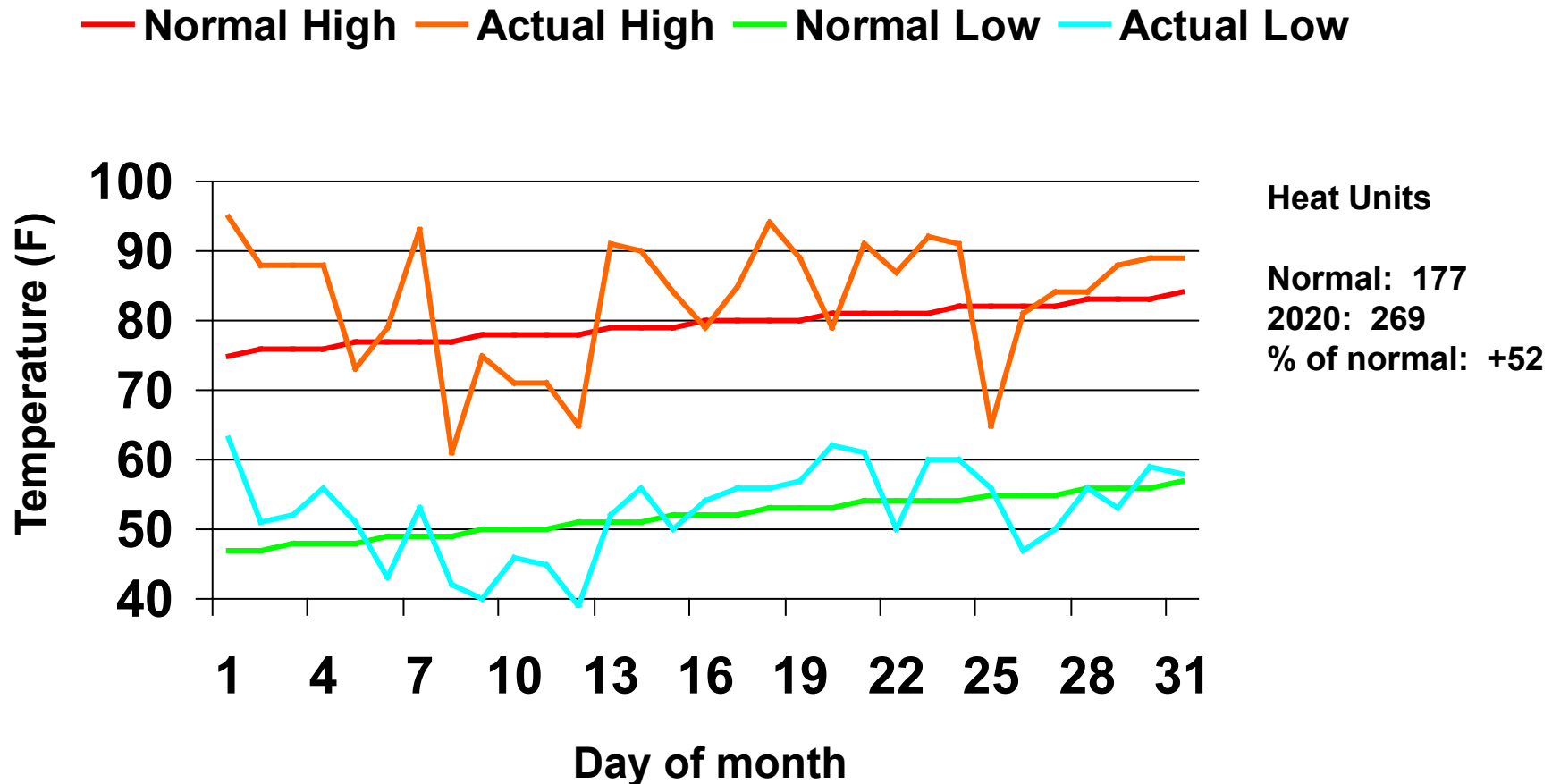
# Amarillo 30-Yr Normal (1981-2010) vs. 2018, 2019, and 2020

## Cotton Heat Unit Accumulation for May 1 Through First Hard Freeze



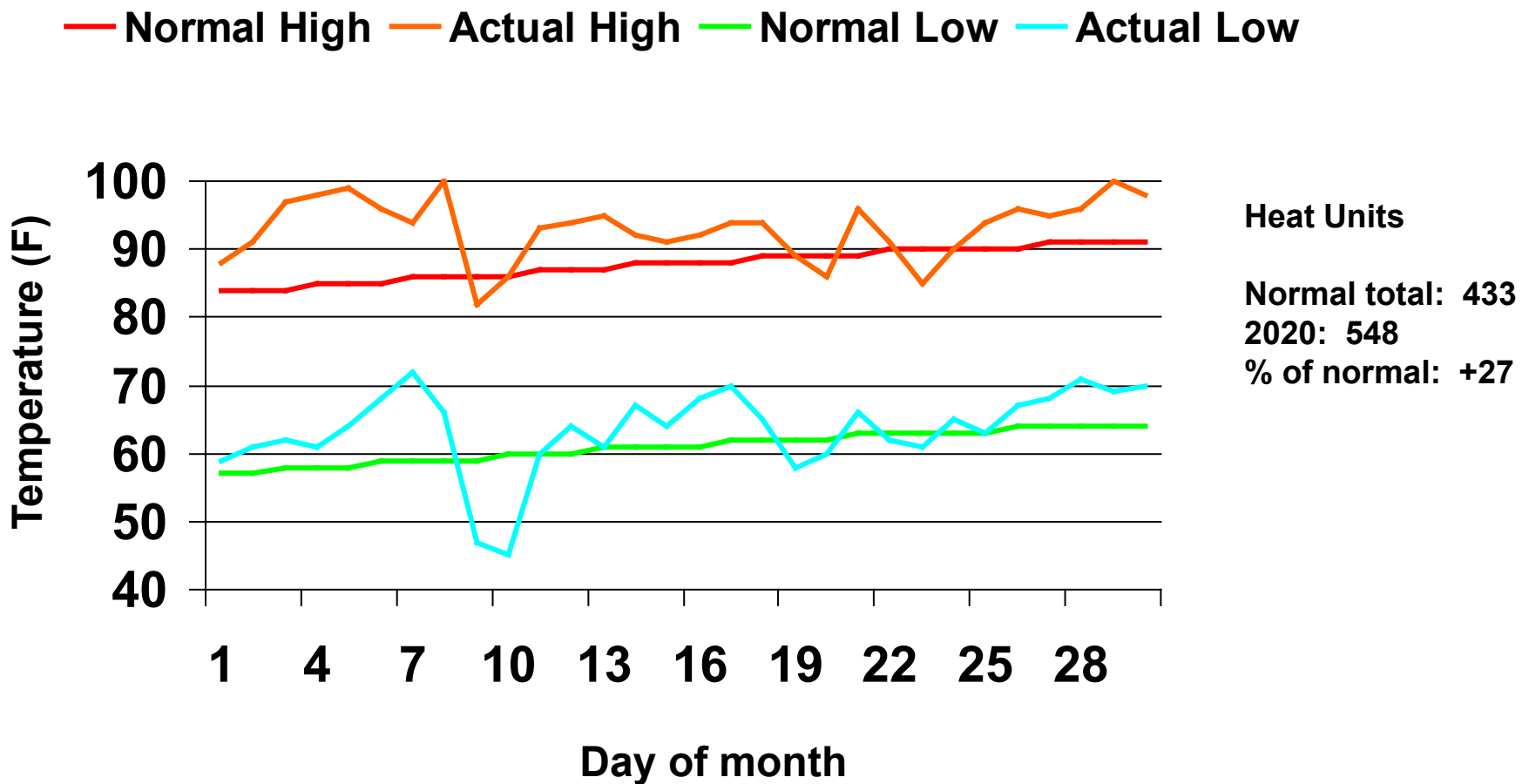
# Amarillo

## 30-Yr Normal (1981-2010) and May 2020 Air Temperatures



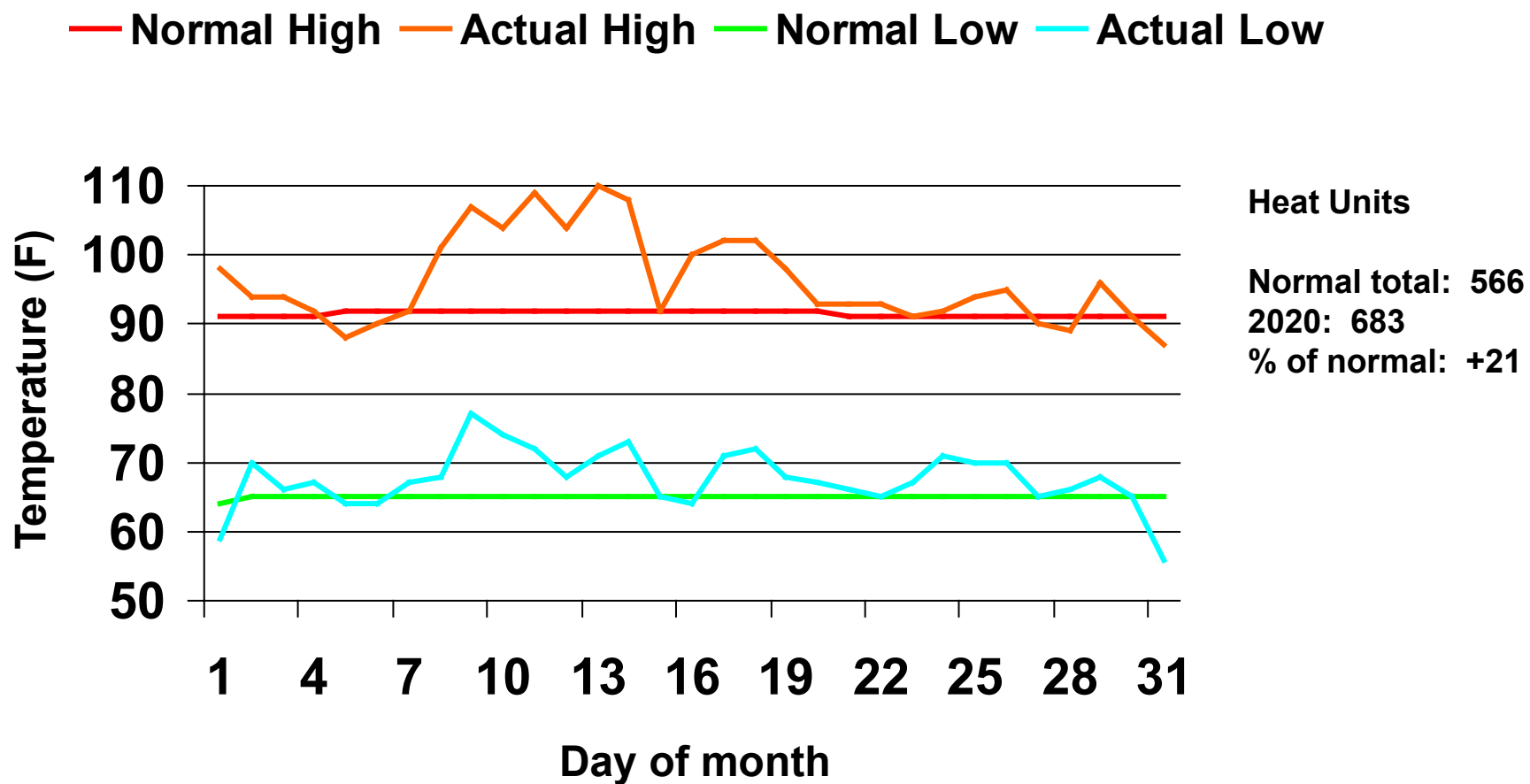
# Amarillo

## 30-Yr Normal (1981-2010) and June 2020 Air Temperatures



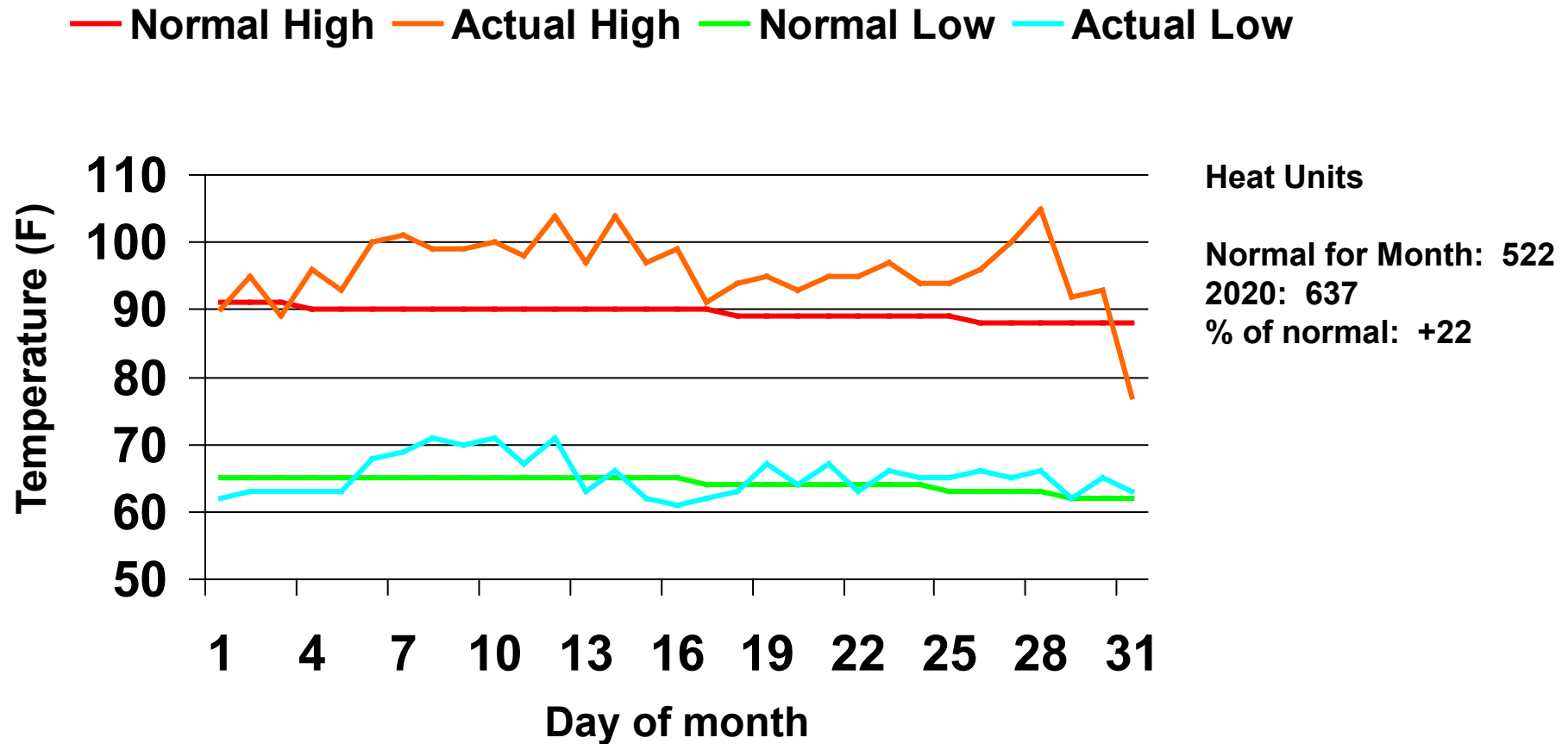
# Amarillo

## 30-Yr Normal (1981-2010) and July 2020 Air Temperatures



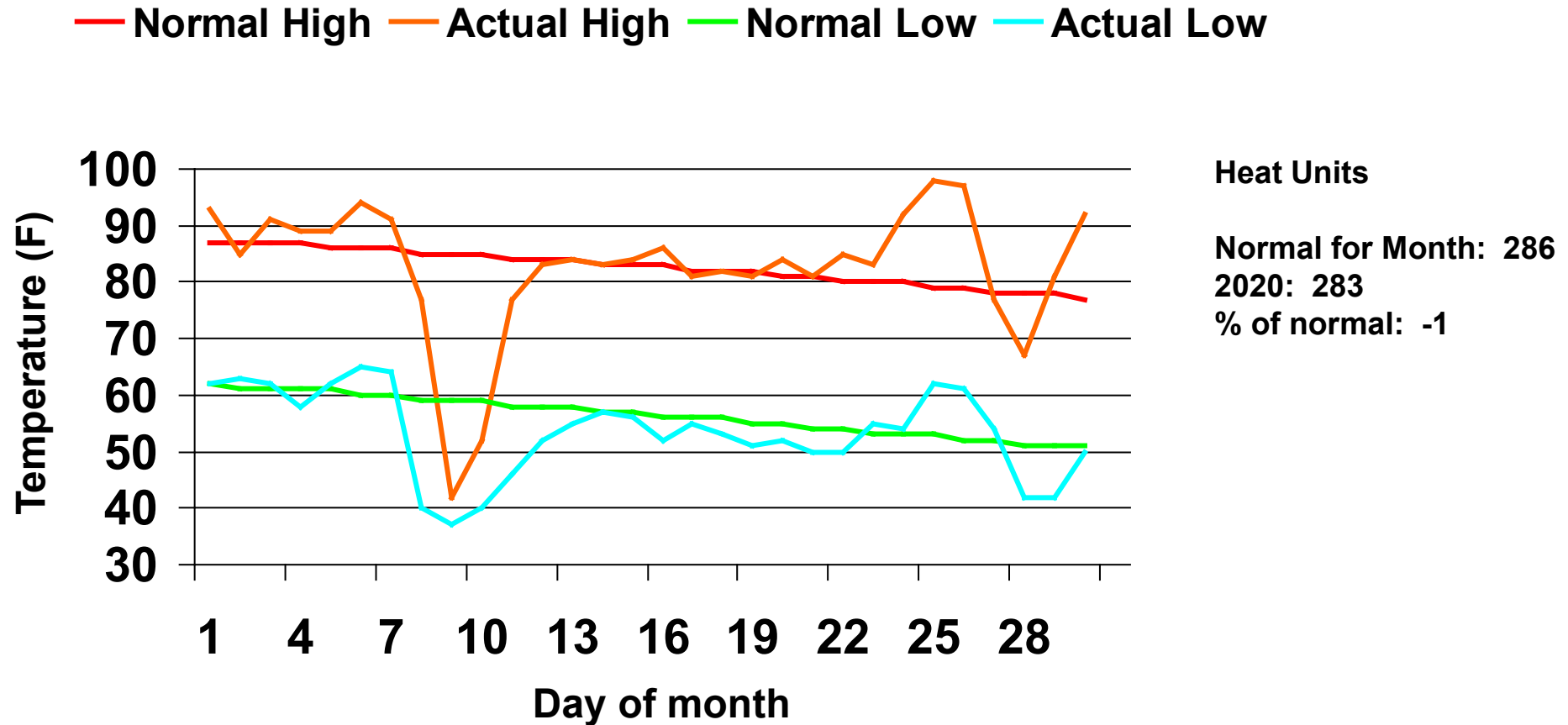
# Amarillo

## 30-Yr Normal (1981-2010) and August 2020 Air Temperatures



# Amarillo

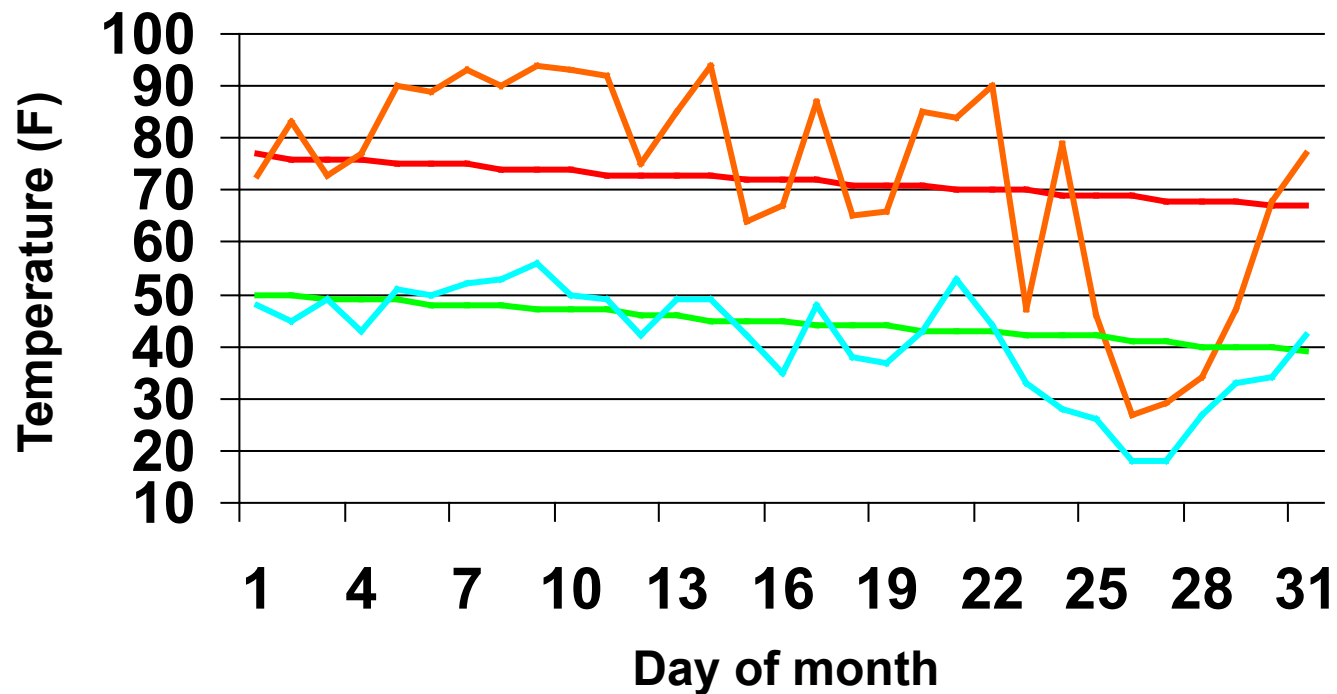
## 30-Yr Normal (1981-2010) and September 2020 Air Temperatures



# Amarillo

## 30-Yr Normal (1981-2010) and October 2020 Air Temperatures

— Normal High — Actual High — Normal Low — Actual Low



Heat Units

Normal: 19

2020: 127

% of normal: +568

Hard freeze on Oct 25