



2021 Mixed Technology Cotton Variety Trial – Edcot Gin

**Bobby Byrd Farm
Plainview, TX**

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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 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 2021, eight mixed technology varieties were planted in a sub-surface drip irrigated field in a scientifically valid trial with three replicates. *This trial experienced minimal adverse weather events. Some entries had better stand establishment percentages than others. These data are presented in Table 2. The trial escaped various localized hail events that occurred in the surrounding area. Overall, it was able to stay on track with growth and development and excellent in-season, yield and quality data were obtained. Presence of Verticillium wilt was noted, but likely had a minimal role in the outcome of the trial.*

Harvest results indicated that statistically significant differences were observed. Lint yields ranged from a high of 1706 lb/acre (FM 1621 GL) to a low of 1425 lb/acre (FM 2398 GLTP), and averaged 1562 lb/acre (Table 1). Cash bids were obtained for commercially ginned and classed bale quality for each variety. This was performed on January 13 (at 116.75 cent/lb March 2022 futures) using the USDA-AMS classing results. Several entries had cash value for lint in excess of \$1.14/lb. These values ranged from a high of about \$1.14/lb (DP 1822 XF, FM 2498 GLT, FM 2202 GL, PHY 332 W3FE, FM 2398 GLTP, and ST 4993 B3XF) to a low of about \$1.13/lb (FM 1621 GL and PHY 394 W3FE) and averaged just under \$1.14/lb. Net value/acre (defined as gross lint cash value plus net gin credit minus planting seed costs) ranged from a high of

\$1941/acre (FM 1621 GL) to a low of \$1607/acre (ST 4993 B3XF), a difference of \$334/acre. These differences were statistically significant.

Table 2 provides similar information for the trial, but net value/acre is based on lint CCC Loan value. Average Loan value for varieties from commercially ginned and classed bales varied from a high of \$0.5767/lb (ST 4993 B3XF) to a low of \$0.5553/lb (PHY 394 W3FE). Overall Loan value for the trial across all entries was 0.5701/lb. Net value/acre (defined as gross Loan value plus net gin credit minus planting seed costs) ranged from a high of \$972/acre (FM 1621 GL) to a low of \$788/acre (ST 4993 B3XF), a difference of \$184/acre (Table 1). These differences were statistically significant.

Table 3 presents in-season data including stand establishment percentage, vigor, nodes above white flower (NAWF) and plant height on three observation dates, nodes above cracked boll on October 12 and a visual estimate of storm resistance at harvest. The trial exhibited almost 10 NAWF (average across all entries) at early bloom on July 29, which indicated outstanding yield potential. Final plant heights ranged from a high of 33.5 inches for DP 1822 XF to a low of 28.9 inches PHY 394 W3FE.

Table 4 provides the USDA-AMS classing results from each commercial bale for each variety and the variety averages. Averages indicate that color grades were excellent and were typically 11, 21, or 31 across all entries. Leaf grades ranged from 1 to 4, with FM 1621 GL exhibiting the highest leaf grade average across bales at 3.6. Staple ranged from about 36.7 (FM 2498 GLT) to 39.0 32nds inch (DP 1822 XF). Average micronaire for varieties ranged from a low of 3.7 to a high of 4.4. No bark contamination was noted in any commercial bales. Fiber strength was 30.2 to 33.9 g/tex, and uniformity ranged from 78.5 to 82.1%.

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 indicate what 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: 3415 ft

Previous crop: cotton harvested in 2020

Tillage system: conventional till

Verticillium wilt: very light

Planted: May 24

Replicates: 3 replicates in a randomized complete block design

Plot width: 8-row plots

Plot length: length of field (~2,400 ft)

Seeding rate: 48,000 seed/acre

Days from planting to first bloom: 65 (July 27)

30/50-inch rows on 40-inch sub-surface drip irrigation tape

Total rainfall May through September: ~10.85 inches

May 3.0, June 1.5, July 2.0, August 3.5, September 0.85

Total irrigation May through September: ~14 inches

May 2.0, June 3.0, July 4.0, Aug 3.0, Sept 2.0

Fertility: 2 tons/acre composted manure (March incorporated), 60 lb N/acre + 4 lb/acre fluid Zn (April incorporated), 4 applications of 3 lb/acre of 20-20-20 foliar fertilizer with Liberty and or glyphosate applications (see dates below)

Herbicides: 2 qt/acre Warrant + 1 qt/acre Cotoran (pre-emergence May 24), 1 qt/acre glyphosate + 1 qt/acre Liberty (June 15), 1 qt/acre Liberty + 1 qt/acre glyphosate (July 1), 1 qt/acre Liberty (August 1), 1 qt/acre glyphosate (August 30)

Plant growth regulators: July 10 – 2 oz/acre Stance, July 29 - 4 oz/acre Stance, August 10 - 4 oz/acre Stance, Aug 23 - 4 oz/acre Stance

Insecticides: none

Harvest aids: 1 qt/acre ethephon applied October 20

Harvesting: December 1, using a John Deere CS690, with harvested area calculated by the GPS on the stripper monitor. Average harvested plot length was about 1,350 ft. Round modules for each individual plot were weighed at Edcot Gin.

Commercial ginning: One round module/plot, round modules for all 3 reps of each variety were staged together (3 total) and commercially ginned separately by Edcot Gin. Commercial ginning included: cleaning module feeder, clearing gin stream, dumping seed rolls, and purging and weighing 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: Two methods were used for lint value. Table 1 is based on cash bids for each variety obtained on January 13, 2022 bids (116.75 cent/lb March 2022 futures) using commercial ginning and USDA-AMS classing results. Table 2 is based on CCC Loan value from commercial ginning and USDA-AMS classing results.

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Acknowledgements

Edcot Gin would like to thank Bobby Byrd for committing his equipment, land, and time to conduct and manage the trial. Gratitude is expressed to the supporting seed companies and Windstar Inc. Detailed ginning was performed by Edcot “Ginner Ernie” and the crew and a big thank you is extended to this hard-working group. Landon Kidd assisted with in-season data collection, and module weighing at the gin.



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Plainview, TX

Dr. Randy Boman
Cotton Agronomics Manager

Variety Descriptions from Company Literature and Websites

DP 1822 XF 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 3.0 (on scale of 1 = tight, 9 = loose). ~ 38 staple, strength ~30.4 g/tex. Disease ratings: Fusarium wilt – n/a, 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). ~ 36.5 staple, strength ~31 g/tex. Disease ratings: Fusarium wilt – good, Verticillium wilt – fair, Bacterial blight - resistant.

FM 2202 GL GlyTol (glyphosate) and Liberty Link (glufosinate) stacked herbicide tolerance technologies. Mid maturity. Semi-smooth leaves, moderate plant height, storm resistance 5 (on scale of 9 = tight, 0 = loose). ~35.5 staple, strength ~32 g/tex. Disease ratings: RKN/Fusarium wilt – fair, Verticillium wilt – outstanding, Bacterial blight - resistant.

FM 2398 GLTP GlyTol (glyphosate) and Liberty Link (glufosinate) stacked herbicide tolerance technologies stacked with TwinLink Plus Bt technology. Medium maturity. Semi-smooth leaves, medium-tall/vigorous plant height, storm resistance 5 (on scale of 9 = tight, 0 = loose). ~ 36.5 staple, strength ~30 g/tex. Disease ratings: Fusarium wilt – fair, Verticillium wilt – very good, Bacterial blight - resistant.

FM 2498 GLT GlyTol (glyphosate) and Liberty Link (glufosinate) stacked herbicide tolerance technologies stacked with TwinLink Bt technology. Medium maturity. Semi-smooth leaves, medium-tall plant height, storm resistance 6 (on scale of 9 = tight, 0 = loose). ~ 37 staple, strength ~30.0 g/tex. Disease ratings: Fusarium wilt – fair, Verticillium wilt – very good, Bacterial blight - resistant.

PHY 332 W3FE Enlist Technology: Widestrike 3 Bt technology stacked with triple herbicide technologies including Roundup Ready Flex (glyphosate), 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 - good. Root knot nematode –resistant. Reniform nematode – resistant. ~37 staple, ~30.5 g/tex strength.

PHY 394 W3FE Enlist Technology: Widestrike 3 Bt technology stacked with triple herbicide technologies including Roundup Ready Flex (glyphosate), Liberty Link (glufosinate), and Enlist herbicide (2,4-D choline) tolerance. Early-mid maturity. Short growth habit. Semi-smooth leaf, storm tolerance - excellent. Bacterial blight - resistant. Verticillium wilt - excellent. ~37.8 staple, ~30.1 g/tex strength.

ST 4993 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 plant height, storm resistance 6 (on scale of 0 = very loose, 9 = very storm tolerant). ~ 36.5 staple, strength ~31.9 g/tex. Disease ratings: Root knot nematode/Fusarium wilt – fair, Verticillium wilt – fair, Bacterial blight – resistant.

For the latest Texas A&M AgriLife Research and Extension information from Dr. Terry Wheeler, and Dr. Cecilia Monclova-Santana (lubbock.tamu.edu):

Bacterial blight disease variety reaction information:

<https://lubbock.tamu.edu/files/2021/01/Variety-guide-for-bacterial-blight-ratings-Jan-2021.pdf>

Verticillium wilt disease variety reaction information:

<https://lubbock.tamu.edu/files/2021/11/Verticillium-wilt-variety-trials-2021.pdf>

Fusarium wilt, Root Knot nematode, and reniform nematode disease variety reaction information:

<https://lubbock.tamu.edu/files/2021/12/Cotton-Disease-Report-2021.pdf>



Table 1. Harvest results with lint cash value from the drip irrigated mixed technology cotton variety trial, Bobby Byrd Farm, Plainview, TX, 2021.

Entry	Lint turnout	Seed turnout	Bur cotton yield	Lint yield	Seed yield	Lint cash value	Lint cash value	Net gin credit	Seed/tech cost	Net value	
	----- % -----		----- lb/acre -----			\$/lb		----- \$/acre -----			
FM 1621 GL	33.0	39.7	5173	1706	2055	1.1253	1920	76	55	1941	a
DP 1822 XF	30.9	38.4	5387	1665	2069	1.1452	1906	71	62	1915	a
FM 2498 GLT	33.0	39.7	4983	1643	1977	1.1407	1874	73	76	1871	ab
FM 2202 GL	32.2	36.4	4943	1590	1797	1.1407	1814	53	55	1812	bc
PHY 332 W3FE	30.7	34.1	5105	1566	1740	1.1453	1794	40	86	1749	c
PHY 394 W3FE	28.6	41.9	5063	1450	2121	1.1294	1638	87	85	1640	d
FM 2398 GLTP	32.1	39.0	4434	1425	1729	1.1442	1630	61	79	1613	d
ST 4993 B3XF	35.0	34.8	4138	1449	1442	1.1426	1655	36	84	1607	d
Test average	31.9	38.0	4903	1562	1866	1.1392	1779	62	73	1769	
CV, %	--	--	3.4	3.4	3.3	--	3.4	3.0	--	3.5	
OSL	--	--	0.0001	0.0001	0.0001	--	0.0001	0.0001	--	0.0001	
LSD	--	--	237	76	87	--	87	3	--	90	

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:

\$3.30/cwt commercial ginning cost.

\$240/ton for seed.

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

Lint value based on cash bids for each variety on January 13th at 116.75 cent March 2022 futures using commercial ginning and USDA-AMS classing results.



Table 2. Harvest results with lint loan value from the drip irrigated mixed technology cotton variety trial, Bobby Byrd Farm, Plainview, TX, 2021.

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 -----			
FM 1621 GL	33.0	39.7	5173	1706	2055	0.5568	950	76	55	972	a
DP 1822 XF	30.9	38.4	5387	1665	2069	0.5764	960	71	62	968	a
FM 2498 GLT	33.0	39.7	4983	1643	1977	0.5710	938	73	76	935	ab
FM 2202 GL	32.2	36.4	4943	1590	1797	0.5736	912	53	55	910	b
PHY 332 W3FE	30.7	34.1	5105	1566	1740	0.5757	902	40	86	856	c
PHY 394 W3FE	28.6	41.9	5063	1450	2121	0.5553	805	87	85	808	d
FM 2398 GLTP	32.1	39.0	4434	1425	1729	0.5755	820	61	79	803	d
ST 4993 B3XF	35.0	34.8	4138	1449	1442	0.5767	835	36	84	788	d
Test average	31.9	38.0	4903	1562	1866	0.5701	890	62	73	880	
CV, %	--	--	3.4	3.4	3.3	--	3.4	3.0	--	3.7	
OSL	--	--	0.0001	0.0001	0.0001	--	0.0001	0.0001	--	0.0001	
LSD	--	--	237	76	87	--	44	3	--	46	

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:

\$3.30/cwt commercial ginning cost.

\$240/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 3. Plant observation results from the subsurface drip irrigated mixed technology cotton variety trial, Byrd Farm, Plainview, TX, 2021.

Entry	Final population	Stand establishment	Vigor	Nodes above white flower			Plant height			Nodes above cracked boll	Storm resistance
				Early bloom	Mid bloom	Late bloom	Prebloom	Early bloom	Final		
	plants/acre 14-Jun	% 14-Jun	1-5 visual scale, 5 best 14-Jun	count			inches			count 12-Oct	1-9 visual scale, 9 tight 1-Dec
				29-Jul	11-Aug	24-Aug	8-Jul	29-Jul	12-Oct		
DP 1822 XF	40,728	84.8	3.5	9.9	5.9	5.3	12.5	27.7	33.5	4.2	5.3
FM 1621 GL	30,928	64.4	2.8	9.9	6.6	5.2	10.3	24.0	29.2	4.1	6.8
FM 2202 GL	33,759	70.3	3.0	10.2	6.5	4.9	9.1	24.6	30.6	3.8	5.8
FM 2398 GLTP	31,146	64.9	2.5	9.5	6.3	4.8	8.2	23.6	30.3	4.9	6.2
FM 2498 GLT	36,155	75.3	3.0	9.9	5.7	4.3	9.5	26.1	32.5	4.7	6.2
PHY 332 W3FE	39,204	81.7	3.8	10.0	5.2	4.4	10.1	27.6	32.1	3.6	5.2
PHY 394 W3FE	42,471	88.5	3.7	9.5	6.7	5.2	8.5	22.1	28.9	3.7	6.5
ST 4993 B3XF	21,562	44.9	2.3	10.1	6.9	5.5	10.4	25.7	32.2	4.1	7.0
Test average	34,494	71.9	3.1	9.9	6.2	5.0	9.8	25.2	31.2	4.1	6.1
CV, %	6.0	6.0	10.7	3.3	6.2	8.3	3.8	2.7	5.1	12.6	3.3
OSL	0.0001	0.0001	0.0005	0.1754	0.0010	0.0360	0.0001	0.0001	0.0266	0.0781	0.0001
LSD	2,979	6.2	0.5	NS	0.6	0.6	0.5	1.0	2.3	0.8	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, NS - not significant.



Table 4. Commercial classing data for the drip-irrigated mixed technology cotton variety trial, Bobby Byrd Farm, Plainview, TX, 2021.

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
DP 1822 XF															
4121514	21-1	2	1	2	38	4.1	.	.	34.4	82.4	7.8	2	81.3	120	58.00
4121515	21-1	2	1	2	39	4.0	.	.	34.7	82.0	7.8	2	79.5	121	57.45
4121516	21-1	2	1	3	39	4.1	.	.	34.3	82.1	7.8	4	80.8	122	57.50
4121517	21-1	2	1	2	39	3.9	.	.	33.0	82.1	8.0	2	80.1	123	58.00
4121518	21-1	2	1	2	40	3.9	.	.	34.3	81.8	7.6	2	79.3	124	57.45
4121519	21-1	2	1	3	39	3.8	.	.	32.9	82.0	7.7	4	81.5	121	57.45
Average	--	2.0	1.0	2.3	39.0	4.0	none	none	33.9	82.1	7.8	2.7	80.4	121.8	57.64
FM 1621 GL															
4121527	31-2	3	1	4	38	4.1	.	.	32.0	79.3	7.0	4	81.6	118	55.40
4121528	31-1	3	1	4	37	4.2	.	.	31.0	80.2	7.5	4	81.6	115	55.35
4121529	31-1	3	1	3	37	4.3	.	.	30.4	79.3	7.8	4	80.8	115	56.65
4121530	31-1	3	1	4	37	4.2	.	.	30.9	79.6	7.9	6	79.8	115	54.60
4121531	31-1	3	1	3	37	4.2	.	.	31.5	80.1	7.7	4	82.8	114	57.00
4121532	31-1	3	1	4	37	3.8	.	.	29.0	79.9	7.6	4	80.3	114	55.00
4121533	31-1	3	1	4	37	3.7	.	.	30.1	80.4	7.6	4	81.5	117	55.15
4121534	31-1	3	1	3	36	3.8	.	.	30.8	80.2	7.6	3	81.7	113	56.30
Average	--	3.0	1.0	3.6	37.0	4.0	none	none	30.7	79.9	7.6	4.1	81.3	115.1	55.68
FM 2202 GL															
4121535	21-2	2	1	3	37	4.3	.	.	32.6	81.2	7.7	3	83.0	115	57.25
4121536	21-1	2	1	2	37	4.3	.	.	33.6	80.9	8.0	2	82.7	114	57.80
4121537	21-1	2	1	3	37	4.4	.	.	31.5	80.8	8.0	2	82.9	115	57.20
4121538	21-1	2	1	2	37	4.2	.	.	32.0	80.7	8.1	2	81.8	115	57.80
4121539	21-2	2	1	3	37	4.0	.	.	32.6	80.9	7.9	4	81.3	114	57.25
4121540	31-1	3	1	3	36	4.2	.	.	30.7	80.4	7.9	3	80.8	113	56.30
4121541	21-2	2	1	3	37	3.9	.	.	33.9	80.7	7.8	2	81.4	117	57.30
4121542	21-1	2	1	2	37	4.2	.	.	34.5	81.3	8.0	2	83.1	116	57.95
Average	--	2.1	1.0	2.6	36.9	4.2	none	none	32.7	80.9	7.9	2.5	82.1	114.9	57.36



Table 4 (continued). Commercial classing data for the drip-irrigated mixed technology cotton variety trial, Bobby Byrd Farm, Plainview, TX, 2021.

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
FM 2398 GLTP															
4121543	21-1	2	1	2	37	4.0	.	.	33.7	83.4	7.8	2	81.3	117	57.85
4121544	11-1	1	1	2	37	4.3	.	.	30.7	83.7	7.8	2	81.0	115	57.50
4121545	11-2	1	1	2	38	4.3	.	.	28.8	83.4	7.9	2	82.2	118	57.50
4121546	21-1	2	1	2	37	4.2	.	.	29.1	83.2	7.8	3	80.9	115	57.45
4121547	11-1	1	1	1	37	4.2	.	.	29.8	83.6	7.8	1	80.0	117	57.45
4121548	21-1	2	1	2	38	3.7	.	.	30.5	83.3	7.8	2	80.7	119	57.75
4121549	11-2	1	1	2	37	3.9	.	.	29.1	83.1	8.0	2	80.4	115	57.45
4121550	21-1	2	1	1	37	4.1	.	.	29.9	82.7	7.7	1	80.1	114	57.45
Average	--	1.5	1.0	1.8	37.3	4.1	none	none	30.2	83.3	7.8	1.9	80.8	116.3	57.55
FM 2498 GLT															
4121520	11-2	1	1	2	37	3.7	.	.	32.2	83.9	7.6	2	78.2	115	57.15
4121521	11-2	1	1	2	37	4.8	.	.	29.6	83.9	7.7	2	80.9	117	57.35
4121522	11-2	1	1	2	37	4.5	.	.	30.7	83.6	7.7	1	81.3	115	57.50
4121523	11-1	1	1	2	37	4.6	.	.	30.2	83.9	7.8	1	81.1	115	57.50
4121524	11-2	1	1	2	37	4.7	.	.	29.8	83.5	7.6	1	79.5	115	56.80
4121525	11-2	1	1	2	36	4.1	.	.	30.2	83.6	7.5	1	80.1	112	57.05
4121526	11-2	1	1	1	36	4.1	.	.	29.8	83.9	7.6	1	79.4	113	56.35
Average	--	1.0	1.0	1.9	36.7	4.4	none	none	30.4	83.8	7.6	1.3	80.1	114.6	57.10
PHY 332 W3FE															
4121559	11-2	1	1	1	39	4.2	.	.	32.7	82.3	8.4	1	81.8	122	57.95
4121560	11-2	1	1	2	37	4.4	.	.	32.0	82.2	8.5	2	80.9	117	57.70
4121561	11-2	1	1	2	38	4.3	.	.	29.5	81.5	8.5	1	79.9	118	56.95
4121562	11-2	1	1	2	37	4.3	.	.	30.2	82.1	8.4	1	79.8	116	56.95
4121563	21-1	2	1	2	38	4.3	.	.	31.2	81.4	8.5	2	80.9	118	57.85
4121564	11-2	1	1	2	38	4.1	.	.	30.6	81.7	8.4	2	81.3	119	57.75
4121565	11-2	1	1	2	38	4.3	.	.	32.6	82.3	8.4	1	81.3	120	57.85
Average	--	1.1	1.0	1.9	37.9	4.3	none	none	31.3	81.9	8.4	1.4	80.8	118.6	57.57



Table 4 (continued). Commercial classing data for the drip-irrigated mixed technology cotton variety trial, Bobby Byrd Farm, Plainview, TX, 2021.

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
PHY 394 W3FE															
4121566	21-2	2	1	3	37	3.8	.	.	29.8	81.0	7.7	3	79.7	117	56.35
4121567	21-2	2	1	3	37	3.7	.	.	30.7	81.2	7.9	3	76.3	115	56.00
4121568	21-2	2	1	3	38	3.8	.	.	31.1	80.7	7.9	3	78.2	118	56.80
4121569	21-1	2	1	3	38	3.6	.	.	30.0	81.2	8.1	2	77.8	118	56.10
4121570	21-1	2	1	3	38	3.7	.	.	30.8	81.2	8.0	2	79.6	118	56.70
4121571	21-1	2	1	3	37	3.4	.	.	30.0	81.4	8.0	2	79.4	117	51.45
4121572	21-2	2	1	4	38	3.6	.	.	31.5	81.0	7.9	6	78.7	118	55.30
Average	--	2.0	1.0	3.1	37.6	3.7	none	none	30.6	81.1	7.9	3.0	78.5	117.3	55.53
ST 4993 B3XF															
4121551	11-2	1	1	1	37	4.5	.	.	34.6	82.5	8.0	1	82.5	115	57.80
4121552	11-2	1	1	2	37	4.6	.	.	32.5	83.2	8.1	1	82.4	115	57.75
4121553	11-1	1	1	2	36	4.6	.	.	32.9	82.7	8.3	2	82.2	113	57.20
4121554	11-2	1	1	1	37	4.4	.	.	32.1	83.0	8.1	1	82.6	114	57.75
4121555	11-2	1	1	1	37	4.4	.	.	31.8	83.4	8.1	1	81.7	115	57.70
4121556	11-1	1	1	1	37	4.4	.	.	31.7	82.9	8.2	1	81.0	114	57.70
4121557	11-1	1	1	1	37	4.1	.	.	30.9	83.4	8.2	1	80.0	114	57.60
4121558	11-1	1	1	1	37	4.0	.	.	32.9	83.5	8.2	1	82.3	114	57.85
Average	--	1.0	1.0	1.3	36.9	4.4	none	none	32.4	83.1	8.2	1.1	81.8	114.3	57.67



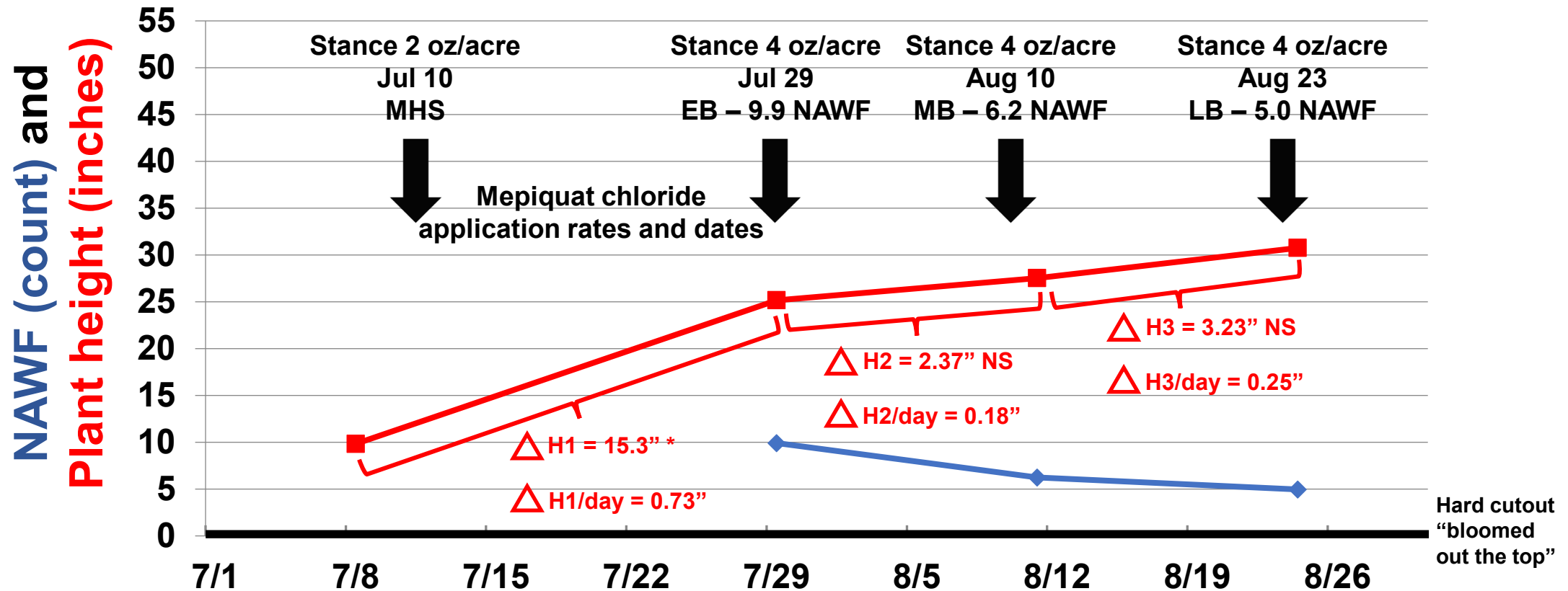


Appendix

Byrd 2021 Mixed Technology Variety Trial – Plant height and NAWF graphs, Amarillo 2021 cotton heat units and weather data.



Byrd Mixed Technology Variety Trial (Across All Entries) Plainview – 2021

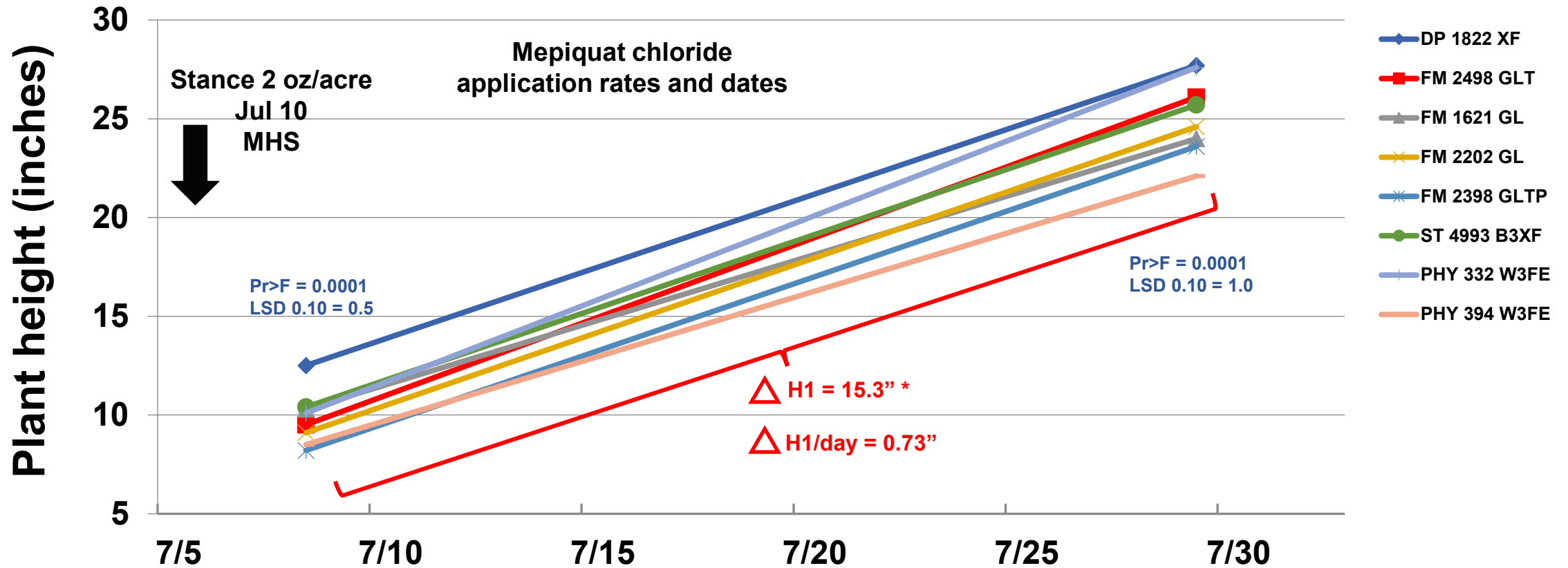


Rainfall (inches): May 3.0, Jun 1.5, Jul 2.0, Aug 3.5, Sep 0.85 = 10.85
Irrigation (inches): May 2.0, Jun 3.0, Jul 4.0, Aug 3.0, Sep 2.0 = 14.0

Planted: May 24
Days to bloom: 65
First bloom date: Jul 27

Byrd Mixed Technology Variety Trial

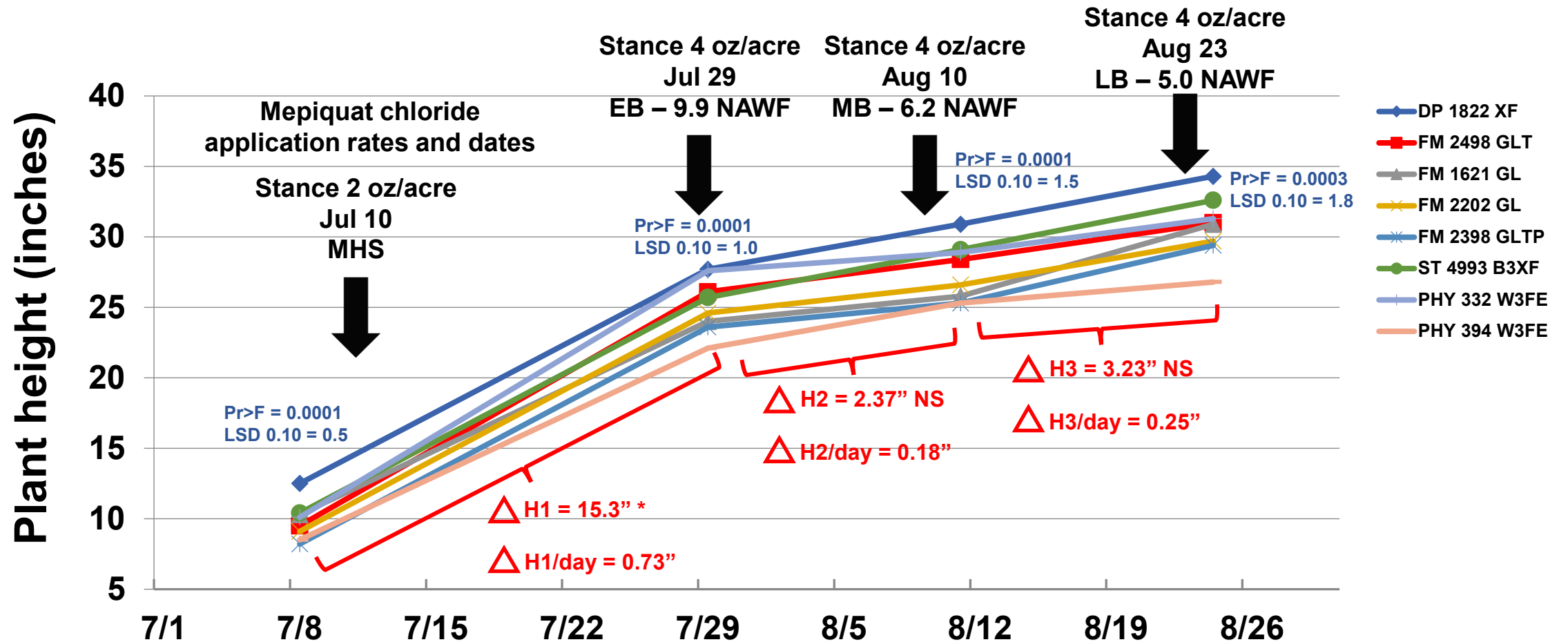
Plainview – 2021



Rainfall (inches): May 3.0, Jun 1.5, Jul 2.0, Aug 3.5, Sep 0.85 = 10.85
Irrigation (inches): May 2.0, Jun 3.0, Jul 4.0, Aug 3.0, Sep 2.0 = 14.0

Planted: May 24
Days to bloom: 65
First bloom date: Jul 27

Byrd Mixed Technology Variety Trial Plainview – 2021

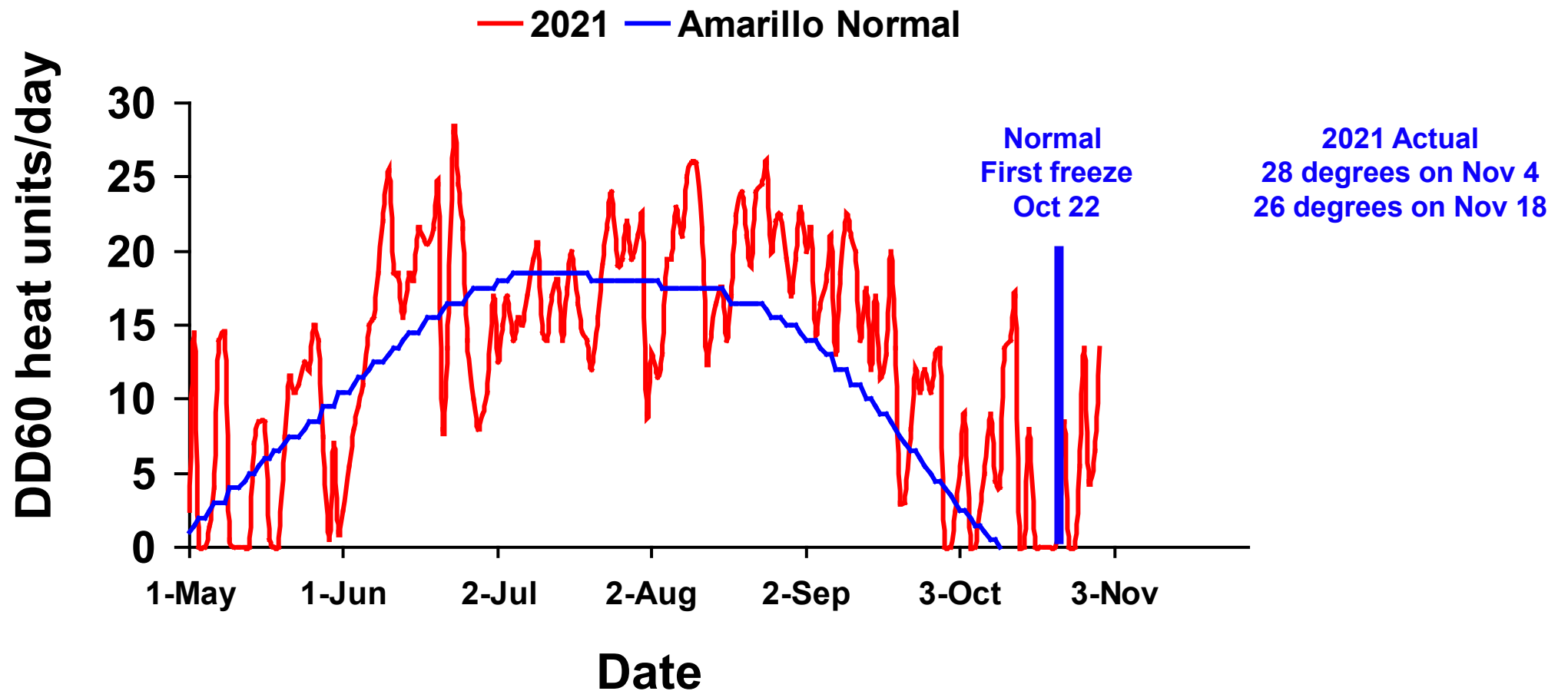


Rainfall (inches): May 3.0, Jun 1.5, Jul 2.0, Aug 3.5, Sep 0.85 = 10.85
Irrigation (inches): May 2.0, Jun 3.0, Jul 4.0, Aug 3.0, Sep 2.0 = 14.0

Planted: May 24
Days to bloom: 65
First bloom date: Jul 27

Amarillo

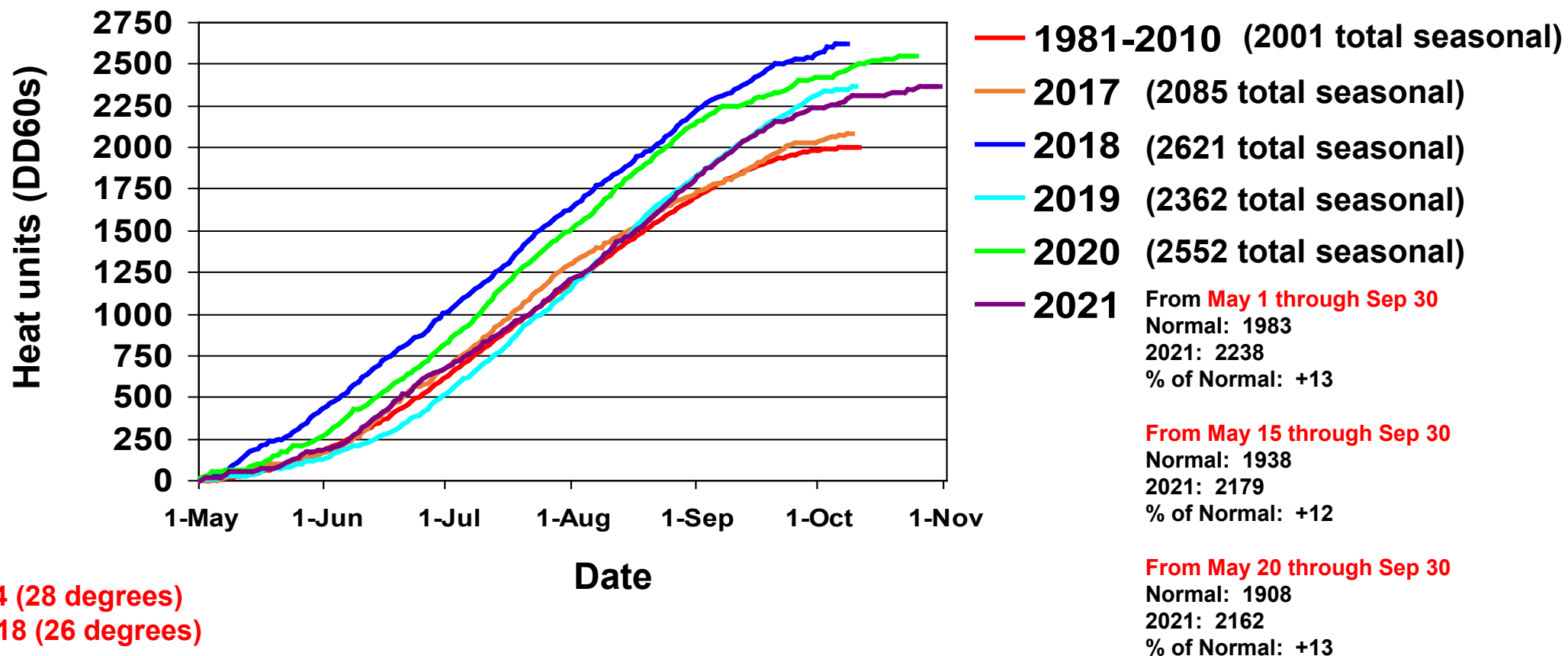
30-Year Normal (1981-2010) and 2021 Daily Heat Units



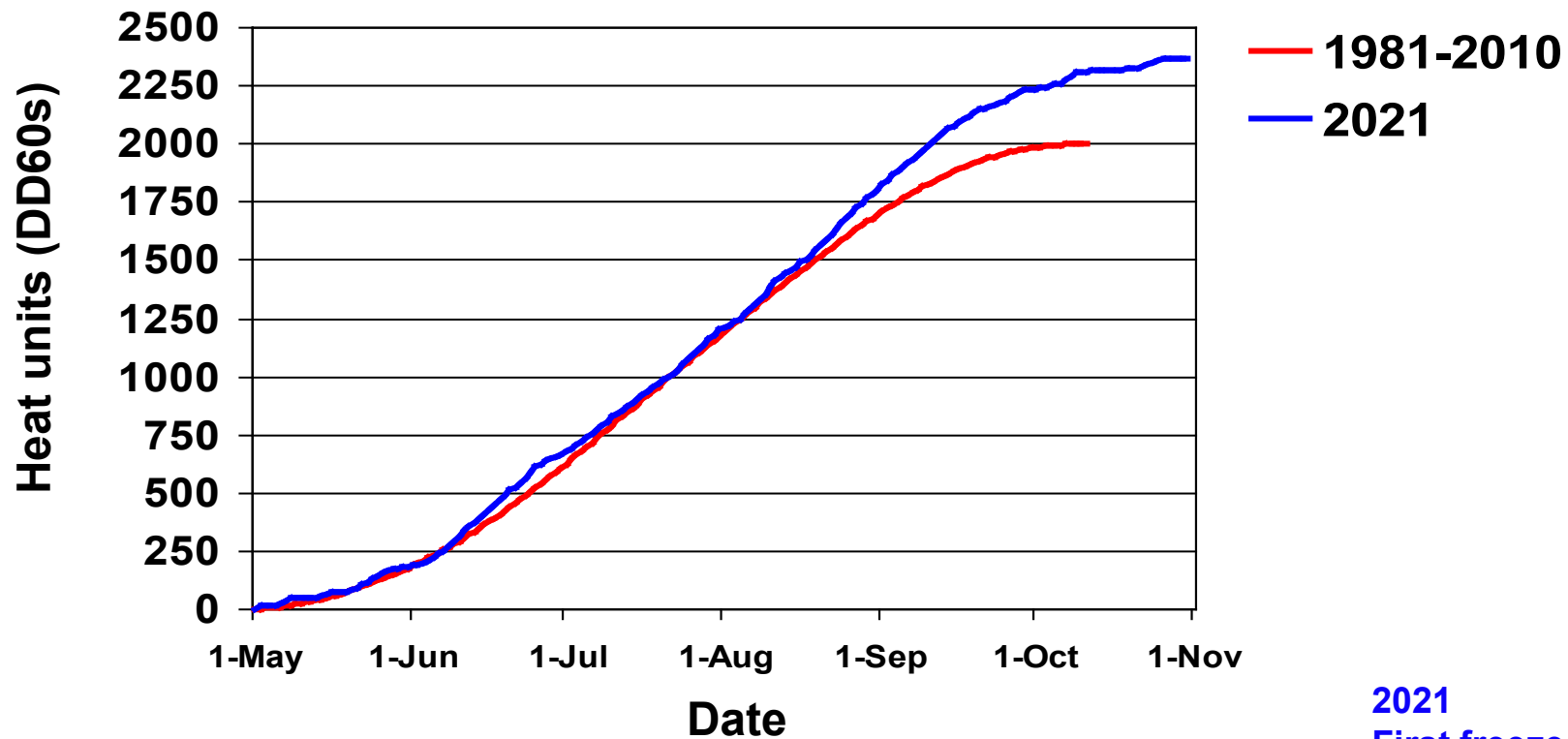
Amarillo 30-Yr Normal (1981-2010) vs. 2017, 2018, 2019, 2020, and 2021

Cotton Heat Unit Accumulation

From May 1 Through First Hard Freeze



Amarillo 30-Yr Normal (1981-2010) vs. 2021 Cotton Heat Unit Accumulation From May 1



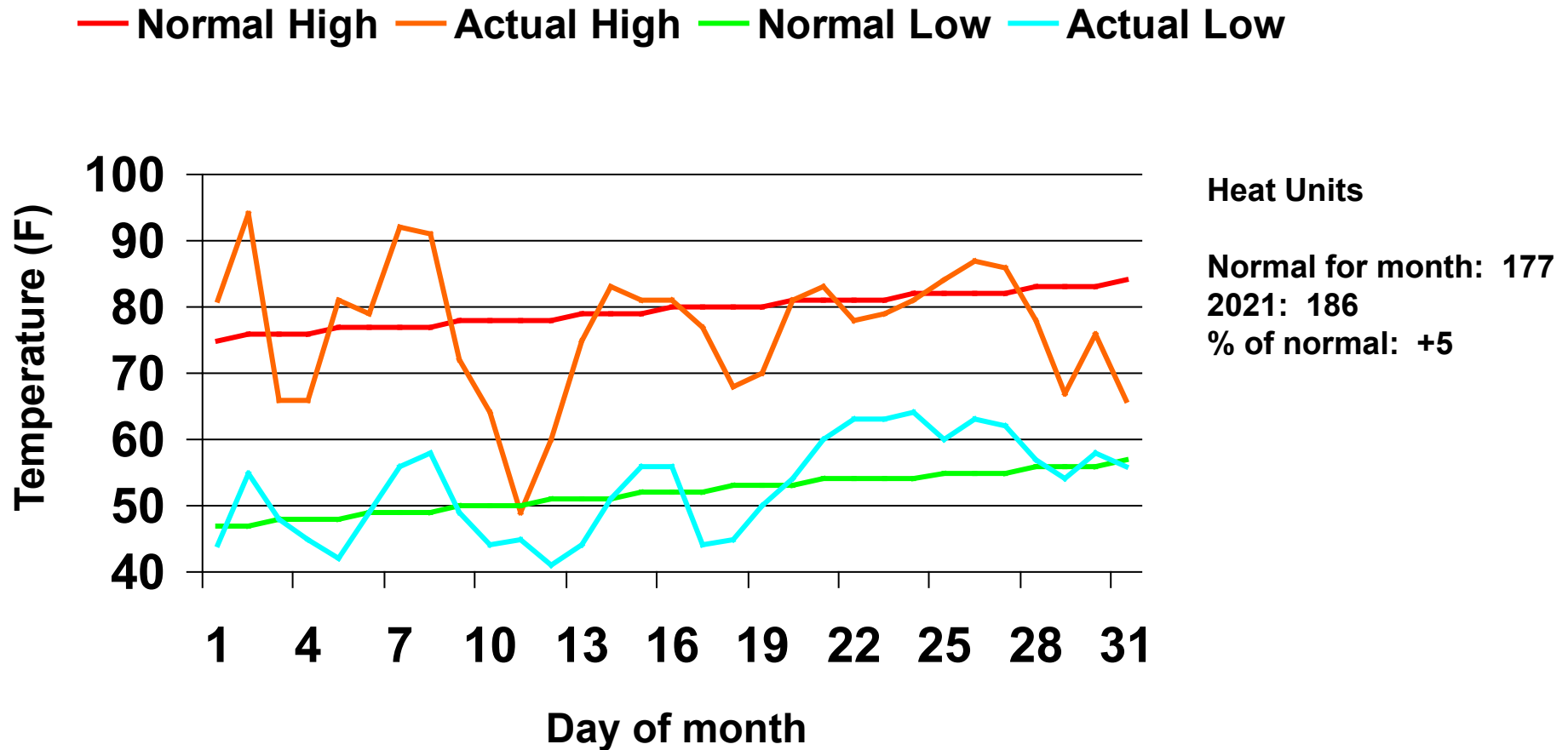
2021

First freeze on Nov 4 (28 degrees)

Hard freeze on Nov 18 (26 degrees)

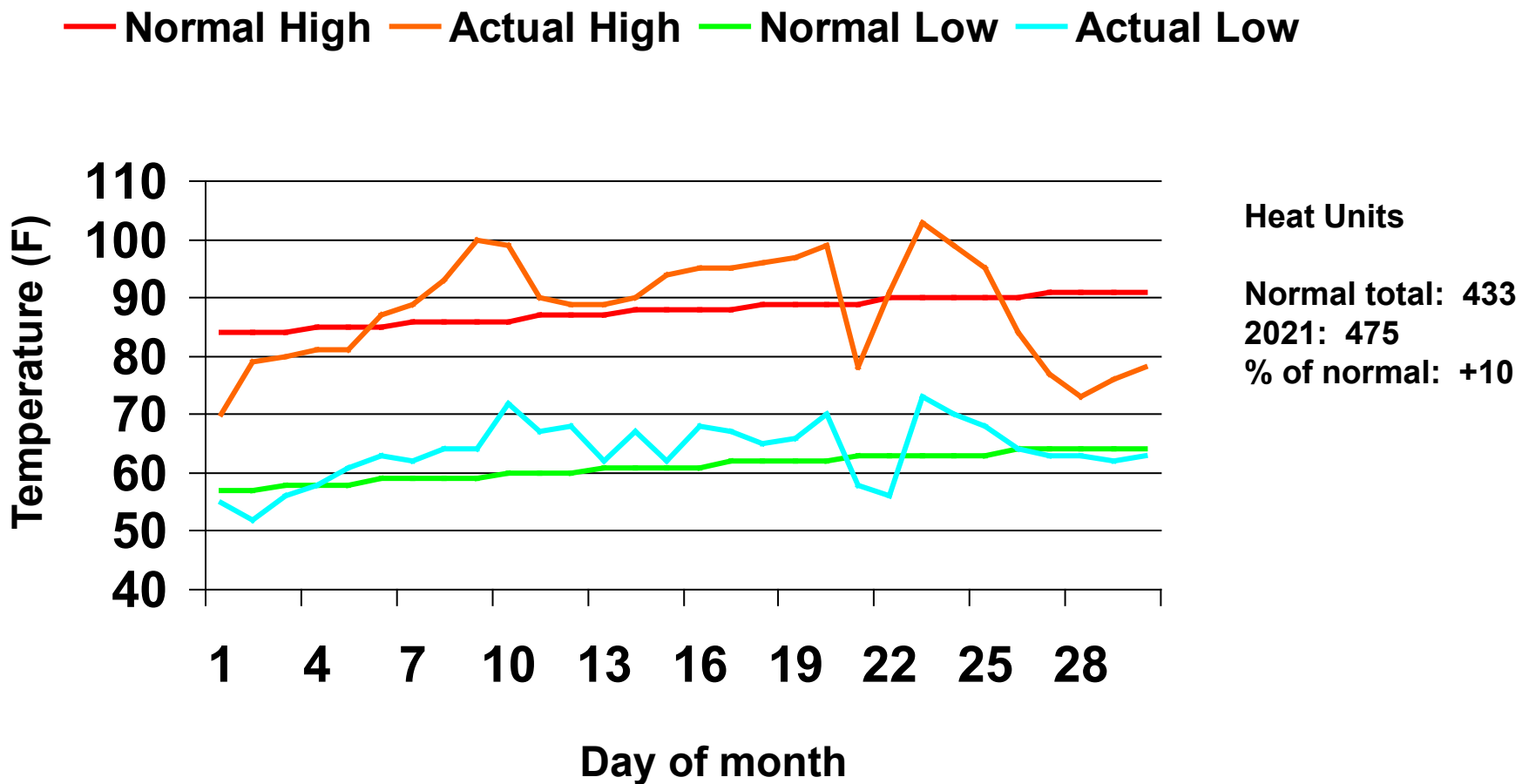
Amarillo

30-Yr Normal (1981-2010) and May 2021 Air Temperatures



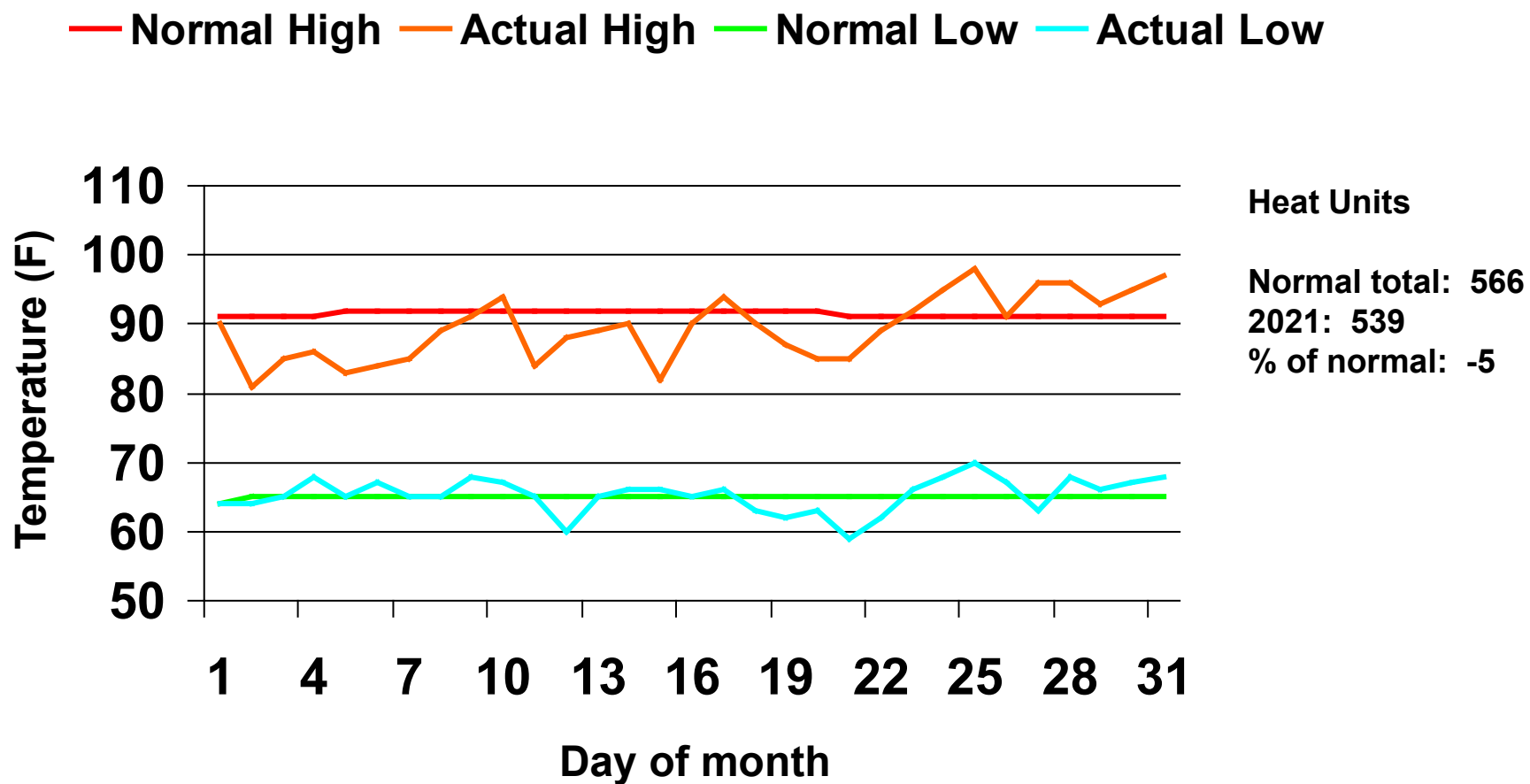
Amarillo

30-Yr Normal (1981-2010) and June 2021 Air Temperatures



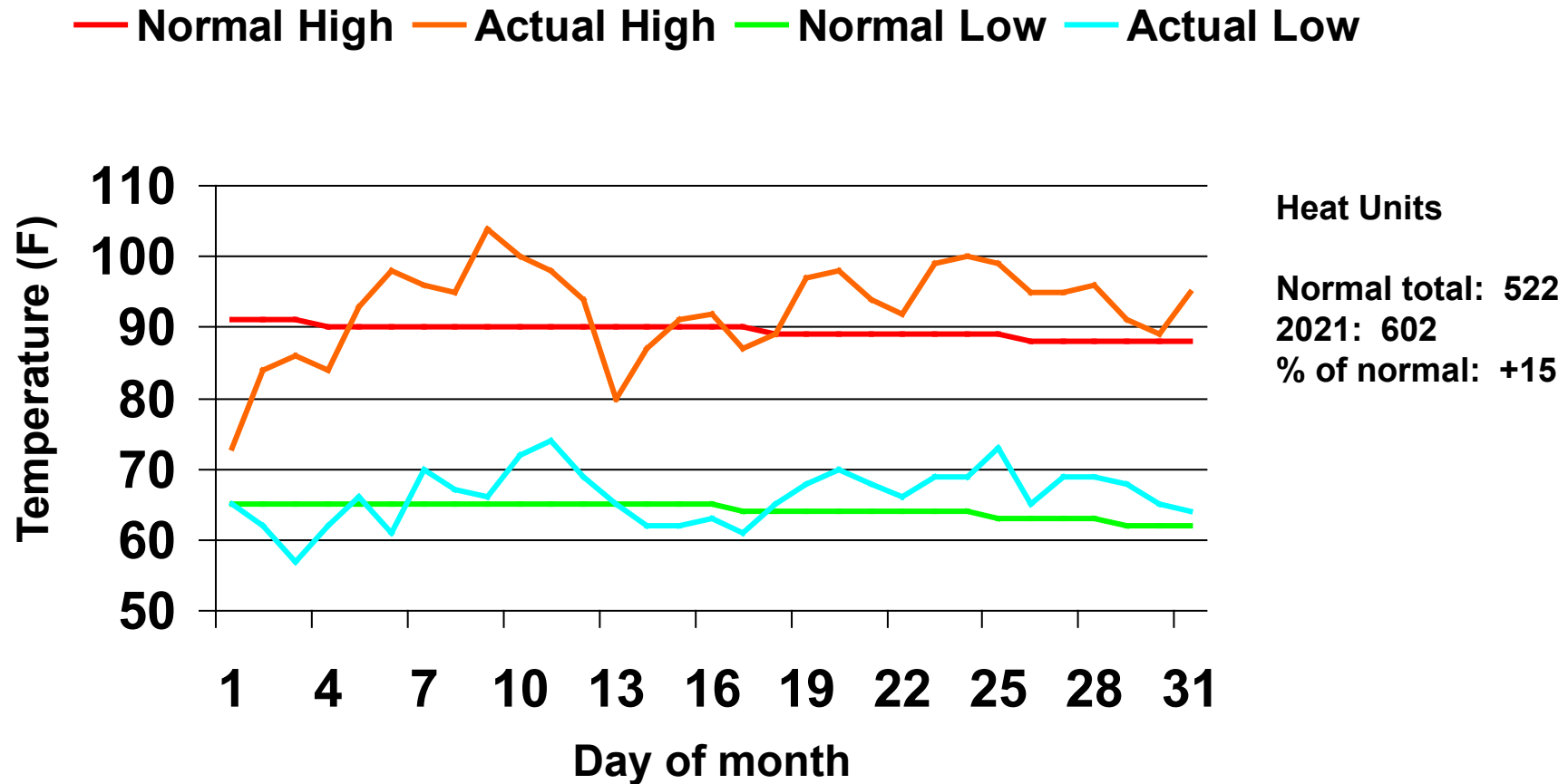
Amarillo

30-Yr Normal (1981-2010) and July 2021 Air Temperatures



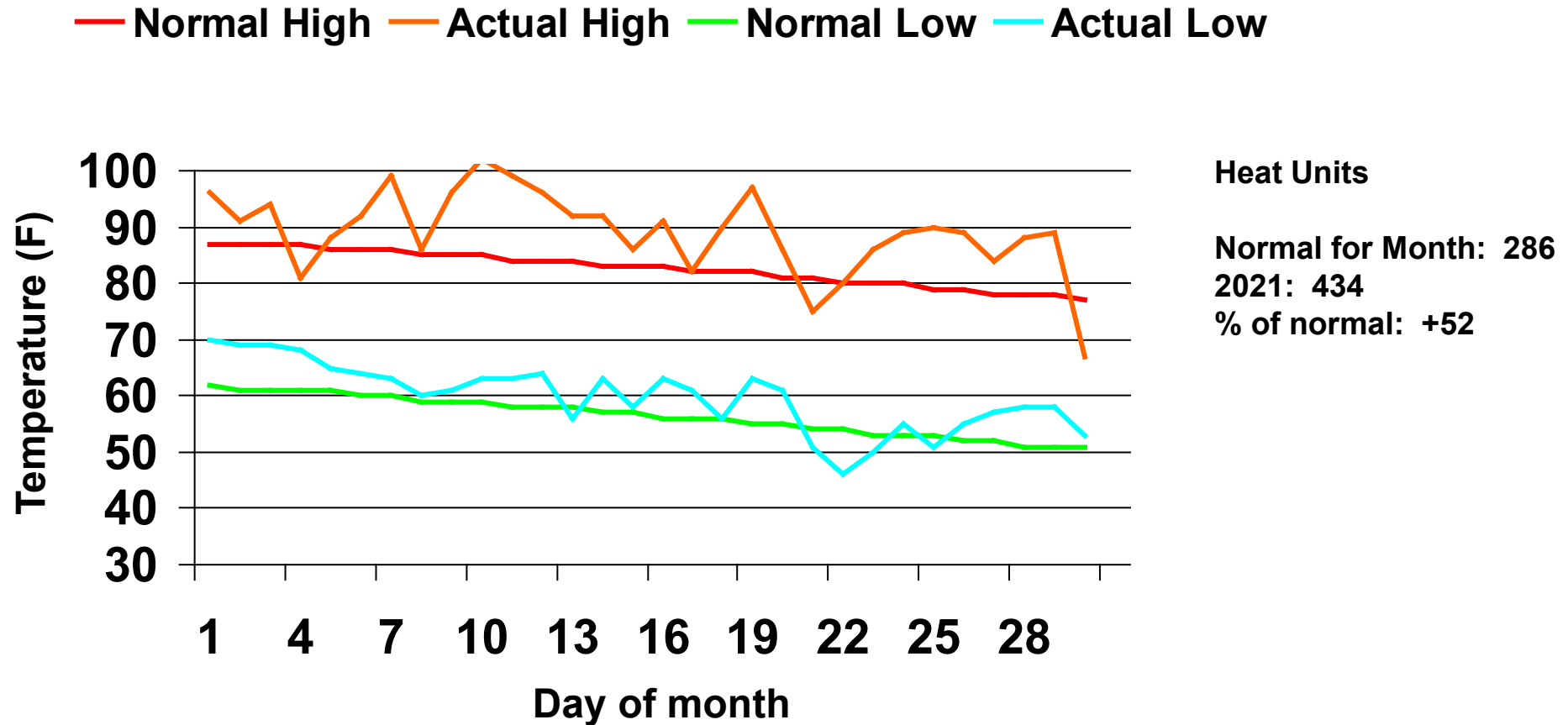
Amarillo

30-Yr Normal (1981-2010) and August 2021 Air Temperatures



Amarillo

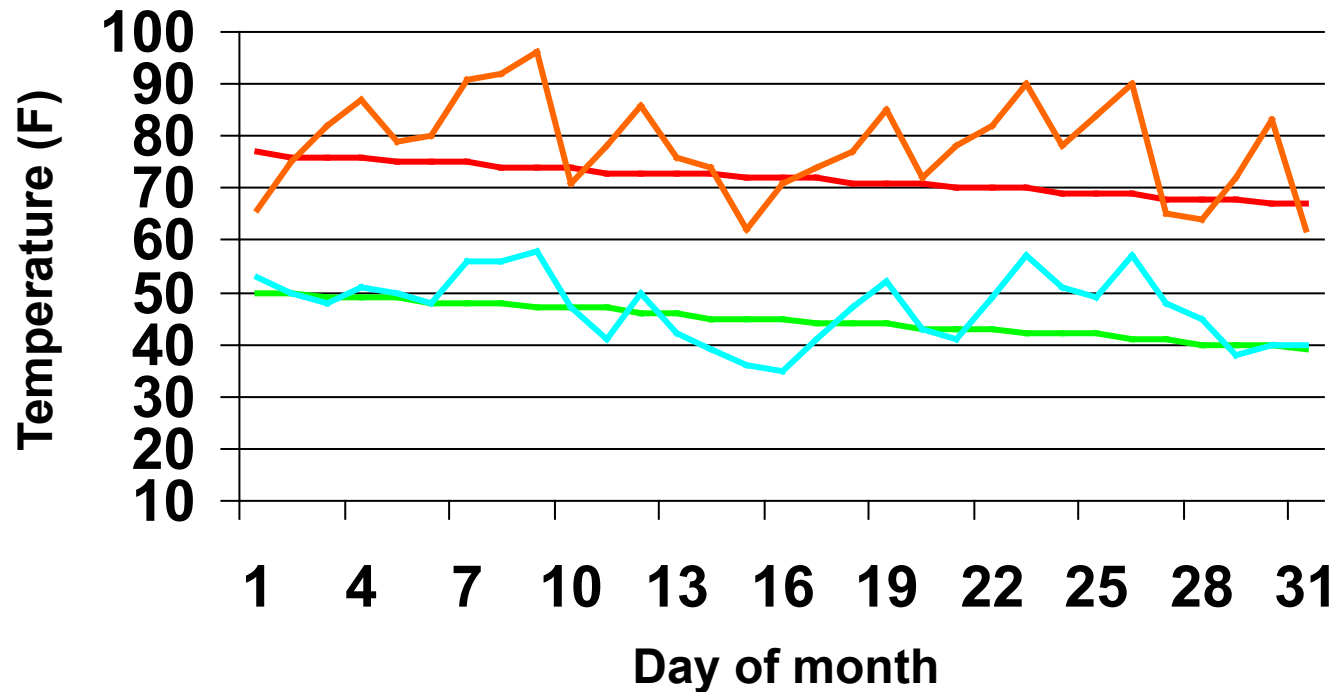
30-Yr Normal (1981-2010) and September 2021 Air Temperatures



Amarillo

30-Yr Normal (1981-2010) and October 2021 Air Temperatures

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



Heat Units

Normal: 19

2021: 133

% of normal: +600

First freeze on Nov 4 (28 degrees)

Hard freeze on Nov 18 (26 degrees)