



## 2021 XtendFlex Technology Cotton Variety Trial – Lonestar Gin

**Harris Farm  
Zach Harris and Marshall Harris  
Hobart, OK**

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

**Carey McKinney, Lonestar Gin 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 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, ten varieties with Bollgard 3 XtendFlex technology were planted in a dryland field in a scientifically valid trial with three replicates. *A full soil profile of moisture was available at planting due to abundant spring rainfall. Excellent early growth in the trial was observed. The trial had good moisture until August, when lack of rainfall resulted in dry conditions. The crop experienced substantial late season stress in August and September. A late rainfall event and warm early fall conditions allowed completion of boll development. Other than encountering moisture stress, it was a uniform dryland variety trial. No Verticillium wilt or other disease pressure was noted in this trial.*

Harvest results indicated that statistically significant differences were observed (Table 1). Lint yields ranged from a high of 994 lb/acre (ST 4993 B3XF) to a low of 724 lb/acre (DP 2022 B3XF), and averaged 811 lb/acre. These differences were statistically significant. Average Loan value for varieties from commercially ginned and classed bales varied from a high of \$0.5782/lb (DP 1948 B3XF) to a low of \$0.5460/lb (DP 2022 B3XF). Average Loan value for the trial across all entries was 0.5601/lb. When including lint Loan value on a per acre basis and net gin credit, statistically significant differences were found in net value/acre among varieties. ST 4993 B3XF had the highest net value at \$570/acre, and DP 2022 B3XF had the lowest at \$444/acre, a difference of \$126/acre.

Table 2 presents in-season data including stand establishment percentage, vigor, nodes above white flower (NAWF) on two observation dates, plant height on three sampling dates, nodes above cracked boll (NACB) on October 9, and a visual estimate of storm resistance at harvest. Final plant height of varieties ranged from a low of 26.7 inches (NG 4098 B3XF) to a high of 33.1 (DP 1646 B2XF and NG 5711 B3XF), and averaged 30.3. NACB values for varieties ranged from a low of 1.6 to a high of 3.3, and averaged 2.6, indicating excellent maturity for all entries in early October. Visual storm resistance ratings (1 to 9 scale with 9 tightest) ranged from a low of 3.5 (DP 2012 B3XF) to a high of 6.3 (ST 4993 B3XF), and averaged 4.7.

Table 3 provides the USDA-AMS classing results from each commercial bale for each variety and the variety averages. Averages indicate that color grades were typically 11, 21 or 31 across entries. Leaf grades were excellent and ranged from 1.0 (ST 4993 B3XF) to 2.6 (NG 4098 B3XF), with an average of 1.6. Staple ranged from an average high of 37.4 (DP 1948 B3XF) to an average low of 34.6 32nds inch (DP 2123 B3XF and ST 4993 B3XF), and averaged 35.7. Average micronaire values ranged from a low of 3.5 (DP 2022 B3XF and NG 4098 B3XF) to a high of 4.9 (ST 4993 B3XF) with an average of 4.3. No bark contamination was noted in any of the commercial bales. Fiber strength ranged from a high of 33.6 g/tex to a low of 28.4 g/tex. Uniformity ranged from a high of 81.8% to a low of 79.6%.

***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**

Dryland field

Elevation: 1590 ft

Previous crop: wheat

Tillage system: no-till

Planted: June 12

Replicates: 3 replicates in a randomized complete block design

Plot width: 12-row plots

Row spacing: 30-inch rows

Plot length: trial was planted in straight rows; ~2400 ft long (one-half mile rows minus headlands)

Seeding rate: 24,000 seed/acre

Days from planting to first bloom: 57 (August 7)

Total rainfall May through September: not recorded at site, Oklahoma Mesonet weather data for the Hobart recording station (about 6.5 miles east of the trial site) is provided in the Appendix

Fertility management: 1 gal/acre Coron (10-0-10) + 1 qt/acre K Leaf on August 21

Chemical Applications:

Post emergence – (August) glyphosate and dicamba

Plant growth regulators: 6 oz/acre mepiquat chloride on August 16, 8 oz/acre mepiquat chloride on August 21

Harvest aid applications: 32 oz/acre ethephon + defoliant in late October

Harvesting: November 18 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.

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 Lonestar 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**

Lonestar Gin would like to thank Zac Harris and Marshall Davis for committing equipment, land, and time to conduct and manage the trial. Marshall Harris planted the trial and Zac Harris performed harvesting operations and we appreciate their excellent assistance. Gratitude is expressed to participating seed companies for providing testing seed. These include Deltapine, NexGen, and Stoneville. Gratitude is also expressed to Windstar Inc. Detailed ginning was performed by Malcom Jones, Dalton Skinner and the Lonestar ginning crew and a big thank you is extended to this hard-working group.



## 2021 XtendFlex Trial Variety Descriptions – Lonestar Gin

**Zac Harris Farm**  
**Hobart, OK**

**Dr. Randy Boman**  
**Cotton Agronomics Manager**

### Variety Descriptions from Company Literature and Websites

**DP 1646 B2XF** Roundup Ready Flex (glyphosate), Liberty Link (glufosinate), and dicamba stacked herbicide tolerance technologies stacked with Bollgard 2 Bt technology. Medium-full maturity. Smooth leaves, medium-tall plant height, storm resistance 5 (on scale of 1 = tight, 9 = loose). ~ 38 staple, strength ~29 g/tex. Disease ratings: Fusarium wilt – moderately susceptible, Verticillium wilt – moderately susceptible, Bacterial blight – moderately resistant.

**DP 1948 B3XF** Roundup Ready Flex (glyphosate), Liberty Link (glufosinate), and dicamba stacked herbicide tolerance technologies stacked with Bollgard 3 Bt technology. Mid-full maturity. Semi-smooth leaves, medium plant height, storm resistance 5.0 (on scale of 1 = tight, 9 = loose). ~ 39 staple, strength ~31.2 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-tall plant height, storm resistance 3.5 (on scale of 1 = tight, 9 = loose). ~ 37.5 staple, strength ~29.8 g/tex. Disease ratings: Fusarium wilt – moderately resistant, Verticillium wilt – moderately tolerant, Bacterial blight – resistant.

**DP 2022 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 3.5 (on scale of 1 = tight, 9 = loose). ~ 36.8 staple, strength ~29.3 g/tex. Disease ratings: Fusarium wilt – moderately resistant, Verticillium wilt – tolerant, Bacterial blight – resistant.

**DP 2123 B3XF** Roundup Ready Flex (glyphosate), Liberty Link (glufosinate), and dicamba stacked herbicide tolerance technologies stacked with Bollgard 3 Bt technology. Early to early-medium maturity. Semi-smooth leaves, medium plant height, storm resistance 4 (on scale of 1 = tight, 9 = loose). ~ 36.5 staple, strength ~30.4 g/tex. Disease ratings: Fusarium wilt – n/a, Verticillium wilt – moderately tolerant, Bacterial blight – moderately susceptible.

**NG 4098 B3XF** Roundup Ready Flex (glyphosate), Liberty Link (glufosinate), and dicamba stacked herbicide tolerance technologies stacked with Bollgard 3 Bt technology. Medium maturity. Storm tolerance 8 (scale of 0 = very loose, 9 = very storm tolerant), leaf hair semi-smooth, plant height medium-tall, node of first fruiting branch (avg) 6, staple 38-39, strength 33-35. Diseases (on scale of 0 very susceptible, 9 superior resistance): Fusarium wilt - no data, Verticillium wilt 7, Bacterial blight 7.

**NG 4190 B3XF** Roundup Ready Flex (glyphosate), Liberty Link (glufosinate), and dicamba stacked herbicide tolerance technologies stacked with Bollgard 3 Bt technology. Medium maturity. Storm tolerance 8 (scale of 0 = very loose, 9 = very storm tolerant), leaf hair smooth, plant height medium-tall, node of first fruiting branch (avg) 6.5, staple 37-38, strength 29-30. Diseases (on scale of 0 very susceptible, 9 superior resistance): Fusarium wilt - no data, Verticillium wilt 5, Bacterial blight 2.

**NG 4936 B3XF** Roundup Ready Flex (glyphosate), Liberty Link (glufosinate), and dicamba stacked herbicide tolerance technologies stacked with Bollgard 3 Bt technology. Medium maturity. Storm tolerance 5 (scale of 0 = very loose, 9 = very storm tolerant), leaf hair smooth, plant height medium-tall, node of first fruiting branch (avg) 6.9, staple 37-39, strength 29-31. Diseases (on scale of 0 very susceptible, 9 superior resistance): Fusarium wilt - no data, Verticillium wilt 6, Bacterial blight 6.

**NG 5711 B3XF** Roundup Ready Flex (glyphosate), Liberty Link (glufosinate), and dicamba stacked herbicide tolerance technologies stacked with Bollgard 3 Bt technology. Medium-full maturity. Storm tolerance 7 (scale of 0 = very loose, 9 = very storm tolerant), leaf hair smooth, plant height tall, node of first fruiting branch (avg) 6.8, staple 37-39, strength 30-32. Diseases (on scale of 0 very susceptible, 9 superior resistance): Fusarium wilt - no data, Verticillium wilt 4, Bacterial blight 9.

**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](http://lubbock.tamu.edu)) go to:

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/2020/12/Verticillium-wilt-variety-trials-2020.pdf>

Fusarium wilt disease variety reaction information:

<https://lubbock.tamu.edu/files/2021/03/Fusarium-wilt-variety-response-2020.pdf>



Table 1. Harvest results for the dryland XtendFlex cotton variety trial, Harris Farm, Hobart, OK, 2021.

Entry	Lint turnout	Seed turnout	Bur cotton yield	Lint yield	Seed yield	Lint loan value	Lint loan value	Net gin credit	Net value
----- % -----									
ST 4993 B3XF	37.2	45.7	2538	944	1161	0.5503	519	51	570 a
DP 1948 B3XF	34.6	42.7	2444	845	1044	0.5782	488	41	529 b
NG 4098 B3XF	33.1	44.4	2560	846	1136	0.5692	481	47	529 b
DP 1646 B2XF	37.0	43.5	2315	856	1008	0.5696	487	40	528 b
NG 4190 B3XF	36.6	43.2	2291	839	990	0.5540	465	39	504 c
NG 4936 B3XF	34.3	45.1	2300	790	1037	0.5676	448	44	493 cd
DP 2123 B3XF	31.9	46.8	2440	780	1142	0.5458	425	52	477 d
DP 2012 B3XF	35.1	43.1	2159	757	931	0.5514	417	37	454 e
NG 5711 B3XF	35.4	44.5	2062	729	918	0.5689	415	38	453 e
DP 2022 B3XF	30.3	46.1	2388	724	1099	0.5460	395	48	444 e
Test average	34.5	44.5	2350	811	1047	0.5601	454	44	498
CV, %	--	--	2.8	2.6	2.8	--	2.7	3.0	2.7
OSL	--	--	0.0001	0.0001	0.0001	--	0.0001	0.0001	0.0001
LSD	--	--	93	30	42	--	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.

\$225/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 dryland XtendFlex cotton variety trial, Harris Farm, Hobart, OK, 2021.

Entry	Final population	Stand establishment	Vigor	Nodes above white flower		Plant height			Nodes above cracked boll	Storm resistance
				Early bloom	Mid bloom	Prebloom	Early bloom	Final		
plants/acre	%	1-5 visual scale, 5 best		count			inches		count	1-9 visual scale, 9 tight
1-Jul	1-Jul	1-Jul		13-Aug	27-Aug	26-Jul	13-Aug	9-Oct	9-Oct	18-Nov
DP 1646 B2XF	21,199	88.3	3.7	6.8	4.5	17.9	28.8	33.1	3.0	4.0
DP 1948 B3XF	20,328	84.7	3.7	7.1	4.4	17.2	26.7	30.1	2.9	5.0
DP 2012 B3XF	20,328	84.7	4.0	6.6	3.6	16.4	26.3	28.7	2.0	3.5
DP 2022 B3XF	19,457	81.1	4.0	6.5	2.9	16.7	24.6	28.5	1.6	4.5
DP 2123 B3XF	22,941	95.6	4.2	6.5	3.3	16.1	25.6	29.1	1.8	4.7
NG 4098 B3XF	21,199	88.4	4.2	5.7	3.8	15.3	23.2	26.7	2.7	6.2
NG 4190 B3XF	19,166	79.9	3.7	6.7	4.5	17.5	26.9	31.4	2.5	3.7
NG 4936 B3XF	18,586	77.4	3.3	6.9	4.5	14.5	24.5	30.6	2.8	3.8
NG 5711 B3XF	16,843	70.2	3.0	7.2	5.0	15.3	27.5	33.1	3.3	4.8
ST 4993 B3XF	18,586	77.4	3.8	6.5	4.3	17.1	26.9	31.3	3.0	6.3
Test average	19,863	82.8	3.8	6.7	4.1	16.4	26.1	30.3	2.6	4.7
CV, %	8.4	8.4	6.3	5.5	15.1	7.7	5.4	4.5	19.0	5.2
OSL	0.0172	0.0173	0.0002	0.0054	0.0158	0.0743	0.0048	0.0002	0.0054	0.0001
LSD	2,355	9.8	0.3	0.5	0.9	1.8	2.0	1.9	0.7	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 3. Commercial classing data for the dryland XtendFlex cotton variety trial, Harris Farm, Hobart, OK, 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
<b>DP 1646 B2XF</b>															
812982	11-2	1	1	1	37	4.3	.	.	30.5	83.3	7.9	1	81.5	116	57.50
812983	11-2	1	1	1	37	4.3	.	.	29.0	82.9	7.9	1	80.5	115	57.35
812984	11-2	1	1	2	39	4.4	.	.	32.1	82.8	8.1	1	80.4	121	57.85
812985	11-2	1	1	1	37	4.5	.	.	30.7	83.0	8.1	1	80.4	114	57.50
812986	11-2	1	1	1	36	4.4	.	.	29.5	82.9	8.0	1	79.8	113	56.25
812987	11-1	1	1	1	37	4.5	.	.	29.9	83.1	8.2	1	81.0	114	57.35
812988	11-2	1	1	2	36	4.4	.	.	30.1	82.5	8.1	2	79.5	112	56.40
812989	21-1	2	1	1	36	4.4	.	.	29.2	82.4	8.1	1	77.8	113	55.75
812990	11-2	1	1	1	37	4.5	.	.	27.9	83.1	8.1	1	78.5	114	56.65
Average	--	1.1	1.0	1.2	36.9	4.4	none	none	29.9	82.9	8.1	1.1	79.9	114.7	56.96
<b>DP 1948 B3XF</b>															
812991	21-1	2	1	2	38	4.3	.	.	34.8	82.8	7.7	1	81.5	119	57.90
812992	21-1	2	1	2	37	4.4	.	.	34.3	82.2	7.7	2	80.2	116	57.75
812993	11-2	1	1	2	38	4.4	.	.	33.6	82.7	8.0	1	81.7	119	57.90
812994	21-1	2	1	2	37	4.3	.	.	33.5	82.3	8.0	2	81.1	114	57.75
812995	11-2	1	1	2	38	4.3	.	.	33.4	82.6	7.9	1	82.6	119	57.95
812996	11-2	1	1	2	37	4.2	.	.	33.1	83.1	8.1	1	81.2	115	57.85
812997	11-2	1	1	2	37	4.3	.	.	33.5	83.2	7.9	1	81.6	116	57.75
812998	11-2	1	1	1	37	4.4	.	.	32.4	83.1	7.9	1	81.8	115	57.70
Average	--	1.4	1.0	1.9	37.4	4.3	none	none	33.6	82.8	7.9	1.3	81.5	116.6	57.82
<b>DP 2012 B3XF</b>															
812999	21-1	2	1	2	35	4.1	.	.	29.8	82.4	7.8	2	80.2	110	55.50
813000	21-1	2	1	2	34	4.4	.	.	32.5	82.5	7.7	1	81.0	107	54.00
813001	21-1	2	1	1	34	4.4	.	.	29.3	81.9	7.9	1	79.9	107	53.10
813002	21-1	2	1	2	35	4.4	.	.	31.3	82.2	7.8	1	80.9	110	55.75
813003	11-2	1	1	1	35	4.3	.	.	29.1	82.8	8.0	1	80.0	109	55.40
813004	21-1	2	1	2	36	4.4	.	.	31.0	82.3	7.9	1	80.4	112	57.15
813005	21-1	2	1	2	36	4.4	.	.	31.6	82.4	8.1	2	81.1	111	57.15
813006	11-1	1	1	1	34	4.4	.	.	27.5	83.2	8.2	1	79.2	107	53.05
Average	--	1.8	1.0	1.6	34.9	4.4	none	none	30.3	82.5	7.9	1.3	80.3	109.1	55.14



Table 3 (continued). Commercial classing data for the dryland XtendFlex cotton variety trial, Harris Farm, Hobart, OK, 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
<b>DP 2022 B3XF</b>															
813007	31-1	3	1	2	35	4.0	.	.	27.7	82.4	7.1	2	80.3	110	54.80
813008	31-1	3	1	2	34	3.9	.	.	27.2	81.7	7.1	2	80.7	107	53.05
813009	31-1	3	1	2	34	4.1	.	.	28.0	81.6	7.0	2	79.9	107	52.50
813010	21-2	2	1	2	36	3.9	.	.	27.8	82.8	6.9	2	79.5	111	56.30
813011	21-2	2	1	3	35	4.0	.	.	29.3	82.5	7.1	3	80.6	110	55.00
813012	21-1	2	1	3	36	4.0	.	.	29.5	82.7	7.2	2	80.5	111	56.50
813013	21-2	2	1	2	34	4.0	.	.	29.2	82.4	7.5	2	79.8	107	53.20
813014	21-1	2	1	2	35	4.0	.	.	28.1	83.0	7.4	2	80.3	110	55.45
Average	--	2.4	1.0	2.3	34.9	4.0	none	none	28.4	82.4	7.2	2.1	80.2	109.1	54.60
<b>DP 2123 B3XF</b>															
813015	21-1	2	1	1	35	4.2	.	.	31.9	81.6	8.1	1	80.4	109	55.85
813016	21-1	2	1	2	35	4.3	.	.	32.4	81.6	8.1	1	81.3	108	55.75
813017	21-1	2	1	1	36	4.4	.	.	31.7	81.2	8.1	1	80.8	111	57.15
813018	21-2	2	1	2	34	4.3	.	.	28.1	81.1	7.8	2	80.0	106	53.60
813019	21-2	2	1	2	34	4.2	.	.	28.4	81.2	7.9	2	79.8	106	53.15
813020	21-1	2	1	2	34	4.3	.	.	29.9	81.4	8.0	1	79.8	105	53.10
813021	21-1	2	1	2	34	4.3	.	.	29.9	81.4	8.0	1	79.8	105	53.10
813022	21-1	2	1	2	35	4.4	.	.	30.1	81.0	8.1	2	78.7	108	54.90
Average	--	2.0	1.0	1.8	34.6	4.3	none	none	30.3	81.3	8.0	1.4	80.1	107.3	54.58
<b>NG 4098 B3XF</b>															
813023	21-1	2	1	3	36	4.0	.	.	31.5	80.7	8.1	3	78.4	111	56.20
813024	21-1	2	1	3	36	4.1	.	.	33.3	80.5	8.4	2	79.2	111	56.35
813025	21-1	2	1	2	37	4.0	.	.	33.4	80.0	8.5	2	80.1	116	57.85
813026	21-1	2	1	2	36	3.9	.	.	33.8	80.3	8.7	2	77.9	111	56.25
813027	21-1	2	1	3	37	4.0	.	.	32.4	80.0	8.7	2	80.4	114	57.25
813028	21-1	2	1	3	37	3.9	.	.	34.4	80.1	8.7	2	80.4	115	57.30
813029	21-2	2	1	2	37	4.1	.	.	34.6	79.9	8.4	2	81.0	117	57.85
813030	21-1	2	1	3	36	4.0	.	.	32.5	80.3	8.9	2	79.6	112	56.30
Average	--	2.0	1.0	2.6	36.5	4.0	none	none	33.2	80.2	8.6	2.1	79.6	113.4	56.92



Table 3 (continued). Commercial classing data for the dryland XtendFlex cotton variety trial, Harris Farm, Hobart, OK, 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
<b>NG 4190 B3XF</b>															
813031	21-1	2	1	2	36	4.0	.	.	30.9	82.6	7.7	1	79.7	113	56.50
813032	21-1	2	1	1	35	4.3	.	.	29.5	82.7	7.8	1	80.6	109	55.40
813033	11-2	1	1	2	34	4.3	.	.	27.6	82.5	8.1	1	80.3	107	53.60
813034	11-2	1	1	2	35	4.4	.	.	28.3	82.6	8.0	1	80.8	109	55.35
813035	21-1	2	1	1	35	4.3	.	.	29.8	82.9	7.8	1	80.1	109	55.40
813036	21-1	2	1	1	36	4.3	.	.	29.6	82.8	7.6	1	81.3	111	56.80
813037	21-1	2	1	1	35	4.3	.	.	28.5	82.7	7.7	1	80.2	109	55.35
813038	21-1	2	1	1	35	4.4	.	.	28.4	82.2	7.8	1	79.4	108	54.80
Average	--	1.8	1.0	1.4	35.1	4.3	none	none	29.1	82.6	7.8	1.0	80.3	109.4	55.40
<b>NG 4936 B3XF</b>															
813039	21-1	2	1	2	36	4.5	.	.	29.3	82.9	7.6	2	79.7	112	56.25
813040	21-1	2	1	1	37	4.4	.	.	30.5	83.2	7.5	1	81.6	115	57.50
813041	21-1	2	1	1	36	4.4	.	.	30.0	82.5	7.8	1	81.5	113	56.95
813042	21-1	2	1	1	36	4.4	.	.	30.7	83.2	7.7	1	80.9	112	56.95
813043	21-1	2	1	1	36	4.4	.	.	31.0	83.2	7.7	1	80.7	112	57.15
813044	21-1	2	1	1	37	4.4	.	.	29.2	83.2	7.8	1	82.2	117	57.40
813045	21-1	2	1	2	36	4.4	.	.	30.6	83.4	7.7	1	82.1	112	57.00
813046	11-2	1	1	1	35	4.5	.	.	29.0	84.0	7.7	1	79.7	110	54.85
Average	--	1.9	1.0	1.3	36.1	4.4	none	none	30.0	83.2	7.7	1.1	81.1	112.9	56.76



Table 3 (continued). Commercial classing data for the dryland XtendFlex cotton variety trial, Harris Farm, Hobart, OK, 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
<b>NG 5711 B3XF</b>															
813047	11-2	1	1	1	37	4.3	.	.	30.9	82.1	8.4	1	81.6	114	57.50
813048	11-2	1	1	1	37	4.4	.	.	32.9	82.0	8.5	1	81.2	115	57.70
813049	11-1	1	1	1	36	4.3	.	.	32.0	81.6	8.7	1	81.4	111	57.15
813050	11-2	1	1	1	36	4.3	.	.	33.6	81.3	9.1	1	80.6	112	57.20
813051	11-1	1	1	2	35	4.3	.	.	34.5	81.4	9.2	1	80.6	110	55.80
813052	11-2	1	1	1	35	4.3	.	.	31.0	81.3	8.9	1	81.6	108	55.75
813053	11-2	1	1	2	36	4.3	.	.	32.1	81.2	8.9	2	80.8	111	57.15
Average	--	1.0	1.0	1.3	36.0	4.3	none	none	32.4	81.6	8.8	1.1	81.1	111.6	56.89
<b>ST 4993 B3XF</b>															
813054	21-1	2	1	1	35	4.8	.	.	32.2	81.8	8.2	1	80.5	108	55.75
813055	21-1	2	1	1	34	4.9	.	.	33.4	81.3	8.3	1	82.2	107	54.10
813056	21-1	2	1	1	35	4.9	.	.	33.9	81.2	8.5	1	81.4	109	55.80
813057	21-1	2	1	1	34	4.9	.	.	34.0	80.4	8.5	1	81.5	107	54.05
813058	21-1	2	1	1	35	4.9	.	.	35.2	81.0	8.7	1	82.5	110	55.85
813059	21-1	2	1	1	34	4.8	.	.	32.5	81.4	8.7	1	81.8	107	54.00
813060	21-1	2	1	1	35	4.9	.	.	34.2	81.4	8.6	1	82.8	109	55.85
813061	11-2	1	1	1	34	4.9	.	.	33.3	82.1	8.5	1	81.6	106	54.05
813062	11-2	1	1	1	35	4.9	.	.	33.1	81.5	8.4	1	82.0	109	55.85
Average	--	1.8	1.0	1.0	34.6	4.9	none	none	33.5	81.3	8.5	1.0	81.8	108.0	55.03



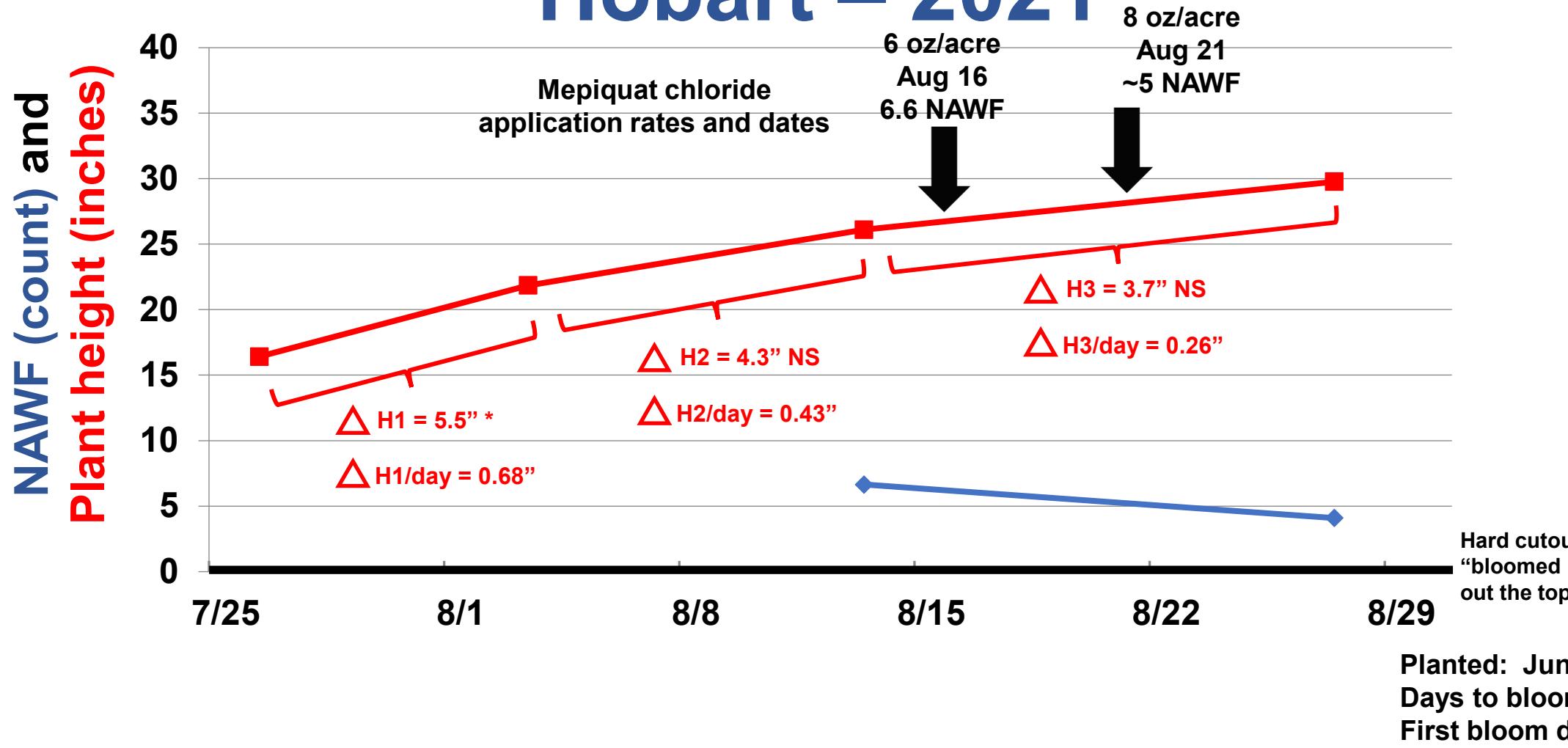
# Appendix

**Harris XtendFlex Variety Trial - Plant Height and NAWF  
Graphs, and Hobart Mesonet 2021 Weather Data**





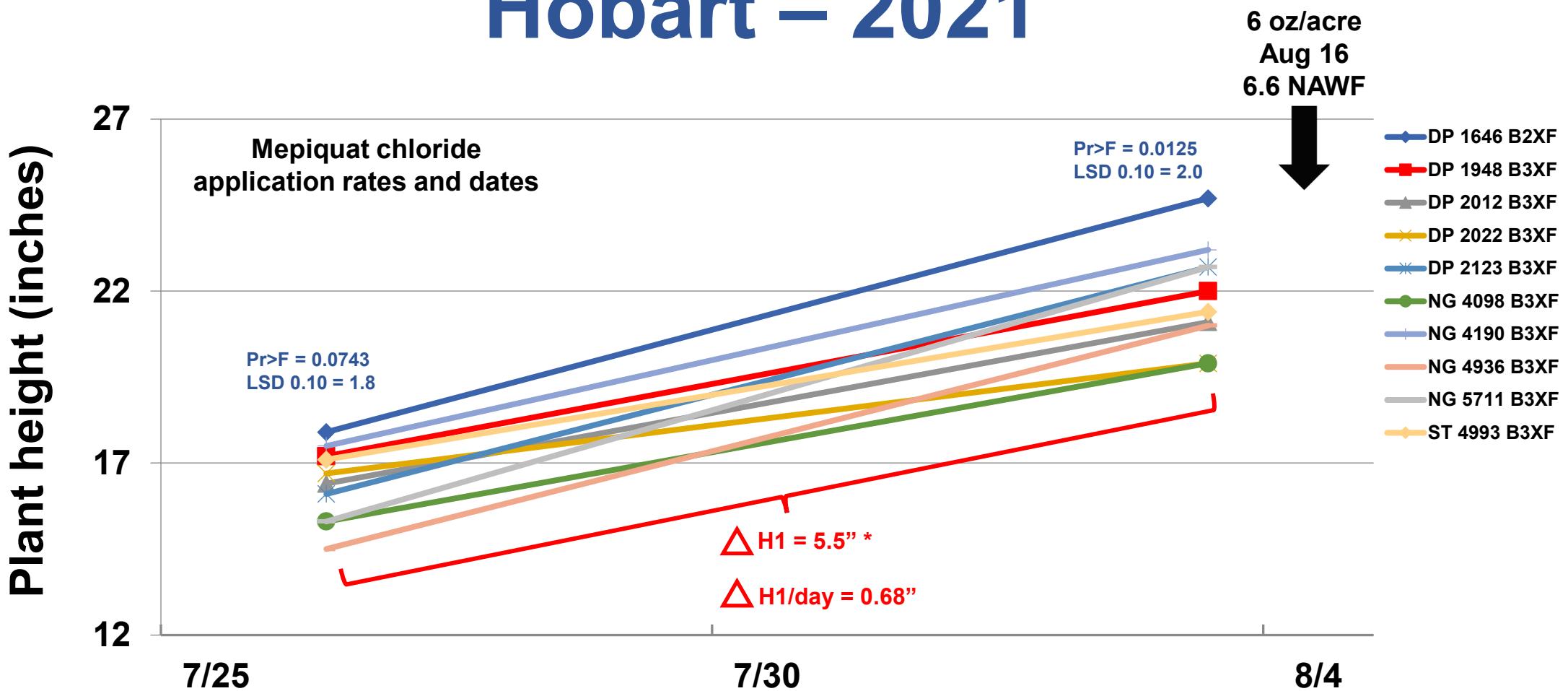
# Harris XtendFlex Variety Trial (Across All Entries) Hobart – 2021





# Harris XtendFlex Variety Trial

## Hobart – 2021

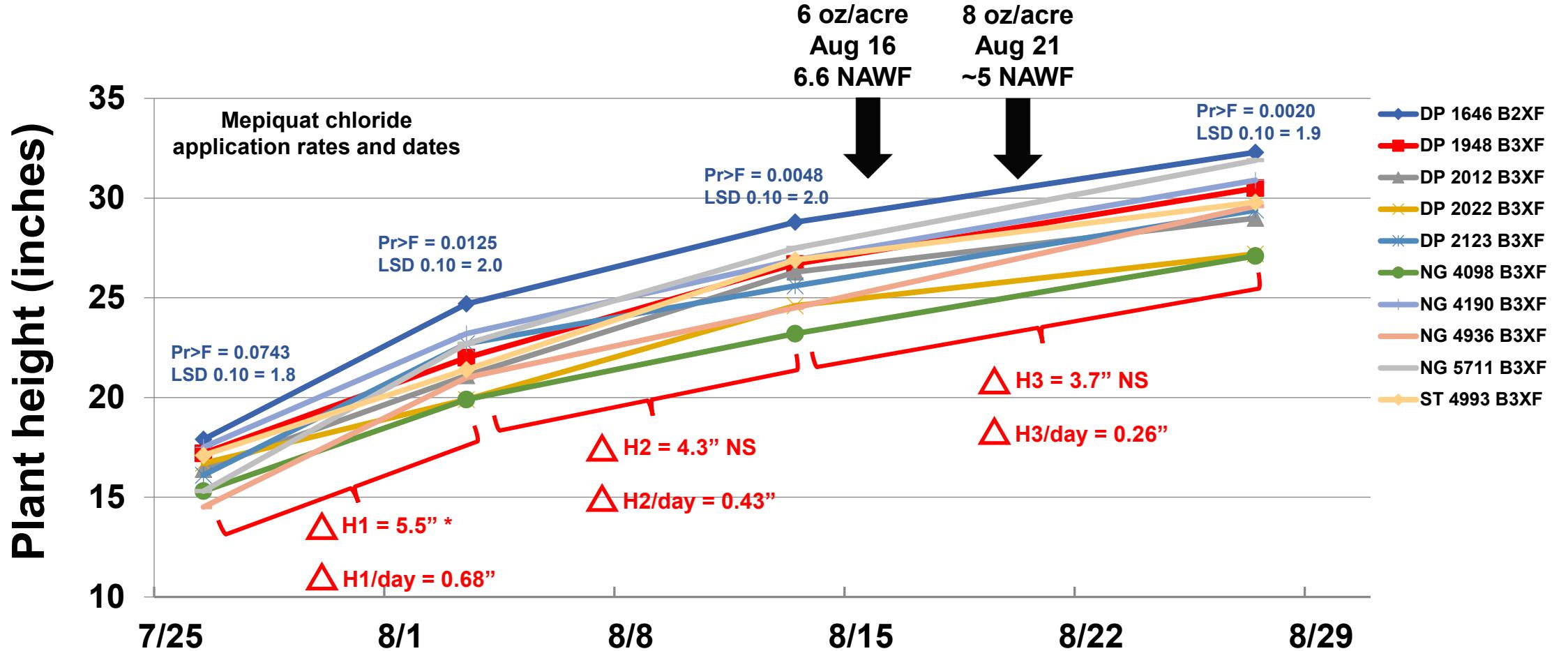


Planted: June 12  
Days to bloom: 57  
First bloom date: Aug 7



# Harris XtendFlex Variety Trial

## Hobart – 2021



Planted: June 12  
Days to bloom: 57  
First bloom date: Aug 7

MESONET CLIMATOLOGICAL DATA SUMMARY (HOBA) Hobart Latitude: 34-59-22								May 2021 Nearest City: 4.0 SE Hobart Longitude: 99-03-10					Time Zone: Midnight-Midnight CST County: Kiowa Elevation: 1552 feet							
DAY	TEMPERATURE ( F )				DEG DAYS		HUMIDITY (%)			RAIN (in)	PRESSURE (in)		WIND SPEED (mph)	SOLAR (MJ/m2)	4" SOIL TEMPERATURES					
	MAX	MIN	AVG	DEWPt	HDD	CDD	MAX	MIN	AVG		STN	MSL			SOD	BARE	MAX	MIN		
1	74	53	64.1	60.1	1	0	99	68	88	0.01	28.31	29.95	SSE	10.4	24.3	10.26	61.6	64.9	68	62
2	80	63	69.8	60.8	0	7	94	50	75	0.00	27.94	29.56	S	14.2	28.6	21.62	63.0	67.7	74	64
3	77	56	66.6	57.3	0	2	94	53	73	0.02	28.00	29.62	NNE	18.4	39.8	10.15	63.0	66.5	69	65
4	70	46	57.9	45.4	7	0	94	27	68	0.13	28.38	30.02	N	13.8	32.4	23.66	62.2	63.8	69	59
5	76	40	60.1	41.6	7	0	91	29	55	0.12	28.50	30.15	SSE	7.5	23.2	28.81	61.7	63.8	72	55
6	78	55	64.8	52.8	0	1	94	37	68	0.17	28.58	30.24	E	7.9	17.5	27.96	63.3	66.8	74	61
7	86	50	69.2	53.9	0	3	92	36	62	0.00	28.39	30.03	S	15.9	40.3	25.27	63.7	66.9	74	60
8	90	63	76.6	60.2	0	11	79	41	58	0.00	28.05	29.68	S	22.4	42.9	27.81	64.9	70.8	77	65
9	77	51	62.5	47.0	1	0	77	39	58	0.00	28.27	29.91	N	18.3	39.5	29.16	65.0	69.9	75	65
10	62	50	55.3	46.0	9	0	80	58	71	0.00	28.43	30.07	NE	15.0	29.9	11.06	62.5	64.3	67	62
11	58	48	52.8	47.7	12	0	97	70	83	0.45	28.47	30.12	NE	15.2	29.2	8.19	60.6	60.7	64	58
12	66	44	53.9	46.4	10	0	94	51	77	0.00	28.65	30.31	NE	8.6	23.2	17.61	59.9	59.2	65	54
13	73	44	58.8	48.1	6	0	97	42	71	0.00	28.63	30.29	SSE	6.7	16.7	23.47	60.6	61.5	69	54
14	75	51	63.4	54.6	2	0	93	55	74	0.00	28.47	30.12	S	12.9	50.3	12.73	61.2	62.4	66	58
15	79	56	69.0	61.5	0	3	96	60	78	0.00	28.36	30.00	SSE	15.0	43.1	15.07	62.2	65.4	70	61
16	76	62	67.9	63.1	0	4	97	65	86	0.08	28.28	29.92	SSE	10.4	24.6	13.74	64.0	67.7	73	65
17	82	61	70.3	61.4	0	6	97	46	76	0.06	28.23	29.86	E	10.0	28.8	25.08	65.7	70.4	78	64
18	79	58	67.7	56.9	0	3	94	39	71	0.00	28.22	29.86	ESE	9.1	35.4	21.41	66.4	70.6	76	66
19	81	58	68.9	58.8	0	5	96	47	73	0.27	28.24	29.88	SE	8.0	20.8	24.10	66.7	71.3	77	66
20	78	61	68.6	61.8	0	4	97	58	80	0.00	28.30	29.94	SE	10.9	26.7	18.05	67.0	69.9	73	67
21	84	64	73.0	64.0	0	9	96	50	76	0.00	28.42	30.06	SSE	14.5	26.8	22.15	67.5	71.0	77	67
22	83	69	73.9	66.5	0	11	93	56	79	0.00	28.52	30.17	SE	14.6	29.4	22.57	68.6	73.5	79	69
23	74	63	68.8	65.7	0	4	97	77	90	0.11	28.48	30.12	SSE	15.0	27.9	7.74	68.4	71.0	74	68
24	76	62	68.5	64.4	0	4	96	73	87	0.00	28.39	30.04	SSE	13.9	27.9	10.34	67.4	68.6	72	66
25	86	62	72.3	63.1	0	9	96	47	75	0.00	28.33	29.97	S	9.7	24.6	19.01	68.0	70.8	77	66
26	90	64	78.2	68.2	0	12	98	49	74	0.00	28.39	30.04	SSE	12.2	30.2	25.13	69.8	75.0	81	69
27	93	67	79.1	68.3	0	15	94	39	72	0.00	28.28	29.92	SSW	18.0	39.2	23.05	71.1	76.8	82	73
28	76	59	65.3	54.0	0	3	96	41	69	0.00	28.41	30.06	NE	10.5	32.2	18.84	69.5	73.6	78	70
29	80	58	67.1	55.1	0	4	88	44	67	0.00	28.42	30.06	ENE	10.3	22.2	27.67	68.8	74.3	82	68
30	80	58	68.4	59.7	0	4	91	58	75	0.00	28.45	30.10	SE	12.4	26.5	23.17	69.1	74.5	80	70
31	71	58	63.9	60.9	1	0	99	71	90	1.78	28.44	30.08	ESE	10.3	27.4	10.28	67.9	70.3	75	68
	78	57	66.7	57.3	<- Monthly Averages ->				28.36	30.00	SSE	12.6	50.3	19.52	65.2	68.5	74	64		
Temperature - Highest: 93 Lowest: 40					Degree Days - Total HDD: 57 Total CDD: 123					Number of Days With: Tmax ≥ 90: 3 Rainfall ≥ 0.01 inch: 11 Tmax ≤ 32: 0 Rainfall ≥ 0.10 inch: 7 Tmin ≤ 32: 0 Avg Wind Speed ≥ 10 mph: 24 Tmin ≤ 0: 0 Max Wind Speed ≥ 30 mph: 11										
Rainfall: Monthly Total: 3.20 in. Greatest 24 Hr: 1.78 in.					Humidity - Highest: 99 Lowest: 27															

MESONET CLIMATOLOGICAL DATA SUMMARY (HOBA) Hobart Latitude: 34-59-22							June 2021 Nearest City: 4.0 SE Hobart Longitude: 99-03-10					Time Zone: Midnight-Midnight CST County: Kiowa Elevation: 1552 feet								
DAY	TEMPERATURE ( F )				DEG DAYS		HUMIDITY (%)			RAIN (in)	PRESSURE (in)		WIND DIR	SPEED (mph)	SOLAR (MJ/m2)	4" SOIL TEMPERATURES				
	MAX	MIN	AVG	DEWPt	HDD	CDD	MAX	MIN	AVG		STN	MSL				SOD	BARE	MAX	MIN	
1	76	59	65.0	57.3	0	2	96	53	78	0.00	28.46	30.11	NNE	8.4	19.7	20.23	68.0	70.3	76	66
2	78	57	66.2	59.3	0	2	99	53	80	0.01	28.37	30.01	SSE	5.0	18.1	21.02	68.3	NA	NA	NA
3	84	60	70.6	62.6	0	7	96	44	78	0.12	28.36	30.00	S	7.1	32.6	24.12	69.4	NA	NA	NA
4	86	62	74.1	61.3	0	9	97	37	68	0.00	28.36	30.01	S	9.7	21.6	29.27	70.7	NA	NA	NA
5	81	60	70.5	62.2	0	5	98	45	77	0.00	28.26	29.90	SSE	8.5	21.7	21.96	70.8	NA	NA	NA
6	89	63	75.0	65.9	0	11	97	47	76	0.00	28.15	29.79	SE	10.4	27.0	25.20	71.1	NA	NA	NA
7	85	65	74.8	65.9	0	10	96	53	76	0.14	28.17	29.81	S	7.8	38.4	23.16	72.4	NA	NA	NA
8	91	70	79.8	67.3	0	16	94	40	69	0.00	28.24	29.88	SE	8.6	23.6	29.29	73.6	NA	NA	NA
9	94	74	83.3	74.7	0	19	97	55	77	0.00	28.28	29.92	SSE	14.2	28.4	28.15	74.9	NA	NA	NA
10	95	72	83.8	74.2	0	18	97	51	75	0.00	28.24	29.88	SSE	11.8	25.6	28.88	76.1	NA	NA	NA
11	96	73	84.8	73.5	0	19	95	50	71	0.00	28.15	29.79	S	13.8	35.1	28.78	76.9	NA	NA	NA
12	92	68	80.4	69.1	0	15	91	47	70	0.00	28.33	29.97	SE	9.1	46.7	28.63	77.1	NA	NA	NA
13	87	66	74.6	66.7	0	12	94	44	78	0.22	28.39	30.03	W	8.1	42.2	9.63	75.7	NA	NA	NA
14	94	66	80.1	66.5	0	15	94	35	67	0.00	28.41	30.06	ESE	5.6	16.3	29.63	75.6	NA	NA	NA
15	96	68	81.5	65.3	0	17	93	31	62	0.00	28.43	30.07	SSE	5.8	19.1	29.19	76.2	NA	NA	NA
16	96	67	82.4	63.9	0	16	93	27	58	0.00	28.40	30.05	S	9.1	25.3	29.72	76.3	NA	NA	NA
17	98	66	83.5	62.2	0	17	93	20	54	0.00	28.36	30.00	S	11.2	25.9	28.94	76.6	NA	NA	NA
18	98	67	83.8	62.8	0	18	88	24	54	0.00	28.28	29.92	S	12.2	28.5	29.43	76.7	NA	NA	NA
19	97	68	84.4	65.1	0	18	92	30	56	0.00	28.20	29.84	S	12.8	26.0	28.43	77.4	NA	NA	NA
20	99	72	85.6	62.2	0	20	75	25	49	0.00	28.10	29.73	S	15.7	34.6	28.89	77.5	NA	NA	NA
21	79	59	70.2	58.1	0	4	95	41	67	0.06	28.33	29.97	NE	14.6	36.6	17.79	75.9	NA	NA	NA
22	86	53	72.0	56.4	0	4	94	29	63	0.00	28.37	30.01	SSE	11.7	30.1	29.18	73.9	NA	NA	NA
23	98*	71*	83.3*	69.3*	0*	19*	92*	38*	66*	0.00*	28.24*	29.88*	S *	19.4*	34.8*	NA	75.7*	NA	NA	NA
24	99	76	87.2	69.4	0	22	85	36	58	0.00	28.23	29.87	S	19.1	33.3	28.47	77.2	85.9	94	79
25	98	77	86.7	69.8	0	22	80	39	59	0.00	28.18	29.81	S	17.9	35.1	24.23	77.9	86.6	94	81
26	85	68	74.8	70.3	0	11	98	61	87	0.77	28.23	29.87	ESE	8.9	42.0	10.70	77.3	80.7	86	77
27	80	66	72.3	67.4	0	8	99	63	85	1.29	28.33	29.97	NE	7.7	17.6	16.37	75.6	76.3	80	72
28	79	67	71.8	69.0	0	8	98	72	91	0.14	28.39	30.04	NE	6.6	23.9	10.24	75.3	75.1	78	72
29	81	70	73.6	70.4	0	10	99	72	90	0.43	28.43	30.08	SE	6.5	18.0	10.00	75.2	75.1	79	73
30	88	69	77.8	71.0	0	14	99	56	81	0.01	28.44	30.09	S	6.5	16.4	19.48	76.1	77.5	83	72
	89*	67*	77.8*	66.0*	<- Monthly Averages ->					28.30*	29.95*	S *	10.5*	46.7*	23.76*	74.7*	78.4*	84*	74*	
Temperature - Highest: 99* Lowest: 53*					Degree Days - Total HDD: 0* Total CDD: 390*					Number of Days With: Tmax ≥ 90: 15* Rainfall ≥ 0.01 inch: 10* Tmax ≤ 32: 0* Rainfall ≥ 0.10 inch: 7* Tmin ≤ 32: 0* Avg Wind Speed ≥ 10 mph: 13* Tmin ≤ 0: 0* Max Wind Speed ≥ 30 mph: 12*										
Rainfall: Monthly Total: 3.19* in. Greatest 24 Hr: 1.29* in.					Humidity - Highest: 99* Lowest: 20*															

MESONET CLIMATOLOGICAL DATA SUMMARY (HOBA) Hobart Latitude: 34-59-22							July 2021 Nearest City: 4.0 SE Hobart Longitude: 99-03-10					Time Zone: Midnight-Midnight CST County: Kiowa Elevation: 1552 feet								
DAY	TEMPERATURE ( F )				DEG DAYS		HUMIDITY (%)			RAIN (in)	PRESSURE (in)		WIND SPEED (mph)	SOLAR (MJ/m2)	4" SOIL TEMPERATURES					
	MAX	MIN	AVG	DEWPt	HDD	CDD	MAX	MIN	AVG		STN	MSL			SOD	BARE	MAX	MIN		
1	92	72	77.4	71.5	0	17	97	44	84	0.17	28.38	30.02	NE	8.3	34.3	18.30	77.2	78.2	84	74
2	85	70	75.0	70.5	0	13	99	62	87	0.70	28.40	30.05	ENE	5.1	20.8	14.35	76.9	77.4	83	74
3	83	69	74.6	70.4	0	11	98	63	87	0.48	28.39	30.04	ENE	6.9	19.5	11.70	76.6	76.5	79	74
4	87	66	76.4	68.0	0	12	98	56	77	0.00	28.34	29.99	SSE	7.5	18.2	23.41	76.6	77.0	84	71
5	87	67	76.8	67.6	0	12	95	54	75	0.00	28.35	30.00	ESE	8.5	20.4	23.64	77.1	77.4	83	72
6	89	67	78.0	69.0	0	13	98	50	76	0.00	28.37	30.01	E	6.9	18.5	26.69	77.6	79.1	86	72
7	93	70	79.5	69.0	0	17	98	40	74	0.00	28.34	29.98	W	4.7	21.9	24.37	78.2	82.4	92	74
8	93	69	81.1	69.5	0	16	97	45	71	0.00	28.32	29.96	S	6.2	16.4	26.64	78.6	84.6	93	76
9	91	70	81.3	69.2	0	16	94	48	69	0.00	28.36	30.00	S	12.8	31.1	28.85	78.8	85.6	94	78
10	94	72	81.5	71.5	0	18	97	48	74	0.45	28.31	29.96	S	11.0	31.3	22.99	78.7	85.4	93	79
11	88	66	77.6	63.3	0	12	96	34	66	0.00	28.38	30.02	N	8.2	24.6	28.92	78.5	81.5	86	77
12	88	63	76.0	63.8	0	10	95	44	69	0.00	28.43	30.08	SSE	5.8	18.9	25.36	77.9	81.0	90	73
13	92	67	80.0	67.1	0	15	96	42	68	0.00	28.46	30.10	S	11.5	27.0	27.89	77.8	83.5	92	76
14	91	69	80.3	67.0	0	15	91	46	66	0.00	28.42	30.07	S	16.0	36.7	26.78	77.6	83.6	91	77
15	91	71	80.8	68.9	0	16	90	51	68	0.00	28.34	29.98	S	14.5	27.8	19.73	77.5	83.4	89	78
16	92	72	81.2	69.9	0	17	93	43	71	0.18	28.31	29.96	S	10.3	32.1	26.40	78.1	84.0	92	77
17	95	70	79.0	71.0	0	18	97	46	79	0.19	28.38	30.02	S	9.0	35.2	23.09	78.6	84.3	95	78
18	92	70	77.5	70.2	0	16	98	46	81	0.55	28.45	30.09	NE	7.4	34.6	22.98	78.5	82.8	92	77
19	87	68	76.6	68.1	0	12	99	48	78	0.01	28.47	30.12	NE	8.0	20.5	22.49	78.2	80.2	85	75
20	86	64	75.3	64.4	0	10	95	46	72	0.00	28.46	30.11	NE	7.4	19.7	26.55	77.5	79.7	88	72
21	87	63	74.3	62.8	0	10	96	39	71	0.00	28.46	30.11	ENE	5.1	12.6	22.50	77.1	80.8	89	74
22	90	67	78.9	65.3	0	14	91	39	66	0.00	28.46	30.11	SSE	10.4	23.4	26.60	77.0	82.4	91	75
23	93	71	82.0	69.2	0	17	91	45	67	0.00	28.40	30.05	S	12.3	26.5	26.78	77.7	84.8	93	78
24	96	74	85.1	69.2	0	20	82	39	61	0.00	28.35	29.99	S	12.1	24.1	26.78	78.5	86.5	94	80
25	98	73	84.6	67.1	0	21	78	36	58	0.00	28.33	29.97	S	10.8	43.8	23.95	78.8	87.1	94	81
26	96	70	82.4	67.4	0	18	93	36	63	0.01	28.35	30.00	E	8.4	31.1	21.42	78.8	86.4	94	81
27	100	73	84.1	70.1	0	22	91	33	66	0.45	28.37	30.01	ENE	6.6	53.7	20.82	79.2	86.7	95	82
28	97	73	84.5	71.3	0	20	95	42	67	0.00	28.41	30.05	ESE	8.1	20.9	24.21	79.7	84.3	90	79
29	97	73	84.6	69.4	0	20	93	37	64	0.00	28.43	30.08	SSE	7.0	18.6	26.22	79.9	86.4	96	78
30	98	71	84.8	68.5	0	20	94	33	62	0.00	28.43	30.08	S	6.9	20.9	25.75	79.7	87.3	96	80
31	99	74	86.7	67.3	0	22	85	31	56	0.00	28.38	30.03	S	9.0	17.5	27.02	80.0	88.6	98	81
	92	70	79.9	68.3	<- Monthly Averages ->				28.39	30.03	S	8.8	53.7	23.97	78.2	82.9	90	77		
Temperature - Highest: 100 Lowest: 63					Degree Days - Total HDD: 0 Total CDD: 487					Number of Days With: Tmax ≥ 90: 21      Rainfall ≥ 0.01 inch: 10 Tmax ≤ 32: 0      Rainfall ≥ 0.10 inch: 8 Tmin ≤ 32: 0      Avg Wind Speed ≥ 10 mph: 10 Tmin ≤ 0: 0      Max Wind Speed ≥ 30 mph: 10										
Rainfall: Monthly Total: 3.19 in. Greatest 24 Hr: 0.70 in.					Humidity - Highest: 99 Lowest: 31															

MESONET CLIMATOLOGICAL DATA SUMMARY (HOBA) Hobart Latitude: 34-59-22								August 2021 Nearest City: 4.0 SE Hobart Longitude: 99-03-10						Time Zone: Midnight-Midnight CST County: Kiowa Elevation: 1552 feet						
DAY	TEMPERATURE ( F )				DEG DAYS		HUMIDITY (%)			RAIN (in)	PRESSURE (in)		WIND DIR	SPEED (mph)	SOLAR (MJ/m2)	4" SOIL TEMPERATURES				
	MAX	MIN	AVG	DEWPt	HDD	CDD	MAX	MIN	AVG		STN	MSL				SOD	BARE	MAX	MIN	
1	82	68	75.8	68.1	0	10	91	61	78	0.02	28.46	30.11	NE	10.9	24.9	8.59	79.1	83.8	88	80
2	86	65	74.8	59.4	0	11	94	34	63	0.00	28.48	30.13	NE	8.7	23.2	26.59	77.6	82.2	91	75
3	88	58	73.5	55.6	0	8	92	27	58	0.00	28.44	30.08	ENE	6.1	18.8	26.99	76.6	82.4	92	74
4	89	61	75.3	59.4	0	10	88	33	61	0.00	28.43	30.08	ENE	5.1	16.8	18.24	76.1	81.3	87	75
5	91	67	78.1	65.2	0	14	85	39	67	0.00	28.41	30.06	S	10.8	29.1	19.59	76.5	81.8	88	77
6	97	69	82.5	66.6	0	18	94	35	63	0.00	28.33	29.97	S	14.4	29.1	25.66	77.5	83.9	92	77
7	98	74	85.5	67.1	0	21	86	31	57	0.00	28.24	29.88	S	17.1	38.3	25.12	78.4	85.4	92	80
8	97	76	86.1	68.3	0	22	73	39	57	0.00	28.22	29.85	S	14.9	32.1	23.30	79.1	86.2	92	81
9	102	77	88.8	68.1	0	24	73	32	52	0.00	28.23	29.87	S	18.4	33.9	25.73	79.6	87.2	94	81
10	99	77	87.8	67.3	0	23	74	32	52	0.00	28.31	29.95	S	17.7	33.0	26.20	80.2	87.8	95	82
11	99	77	86.7	64.0	0	23	66	30	48	0.00	28.31	29.95	S	16.2	33.3	22.34	80.0	86.9	92	82
12	99	76	87.0	65.1	0	22	66	29	50	0.00	28.35	29.99	S	13.8	27.6	25.40	80.1	87.4	95	81
13	96	69	80.7	66.4	0	17	96	39	65	0.19	28.46	30.11	S	9.6	40.3	18.12	80.3	87.0	95	82
14	87	69	75.8	67.0	0	13	96	48	76	0.00	28.54	30.19	ESE	5.6	15.6	19.21	79.3	83.1	90	79
15	92	64	77.6	66.0	0	13	98	40	71	0.00	28.42	30.06	ESE	5.0	15.0	19.09	78.2	82.5	89	76
16	92	67	78.1	67.5	0	15	98	41	73	1.83	28.31	29.95	SE	6.8	49.9	17.58	77.7	82.4	89	77
17	88	70	75.5	69.8	0	14	98	48	84	0.04	28.28	29.92	SSE	8.4	34.4	14.78	76.4	78.6	84	76
18	89	69	76.5	70.7	0	14	98	57	84	0.16	28.32	29.96	SSE	11.4	24.8	15.76	77.1	77.6	83	74
19	90	71	77.6	72.2	0	16	95	64	84	0.00	28.29	29.93	SSE	10.0	23.9	14.68	77.8	78.5	84	75
20	95	73	83.4	71.4	0	19	93	46	69	0.00	28.19	29.83	S	14.0	31.0	20.07	78.2	78.8	83	75
21	96	71	81.6	69.4	0	19	90	44	68	0.17	28.27	29.91	S	9.2	26.5	22.57	78.7	81.1	91	75
22	96	70	83.3	68.1	0	18	92	37	63	0.00	28.32	29.96	S	11.8	27.8	24.30	78.9	81.6	90	75
23	97	69	83.9	64.3	0	18	91	26	56	0.00	28.31	29.95	S	14.8	32.7	26.12	78.6	83.4	91	76
24	98*	71*	84.7*	65.1*	0*	19*	81*	32*	55*	0.00*	28.30*	29.94*	S	* 15.1*	30.5*	NA	78.3*	84.6*	92*	77*
25	99	69	85.5	66.7	0	19	90	31	57	0.00	28.37	30.02	S	11.4	27.7	24.91	78.6	86.3	94	79
26	97	69	84.7	66.2	0	18	93	31	57	0.00	28.40	30.05	SSE	8.9	21.9	24.54	78.7	86.7	95	79
27	97	71	83.7	67.1	0	19	89	34	60	0.00	28.34	29.98	S	10.5	24.3	24.37	79.0	87.0	95	81
28	94	72	82.7	67.1	0	18	91	38	62	0.00	28.35	29.99	SSE	12.4	26.5	24.94	79.0	86.7	94	81
29	95	70	81.2	67.7	0	18	95	37	66	0.00	28.35	30.00	SSE	8.1	22.9	19.78	78.9	86.0	92	81
30	92	68	80.0	66.5	0	15	93	41	66	0.00	28.27	29.91	SE	4.5	17.8	18.04	78.3	84.7	90	79
31	97	70	80.9	67.5	0	18	89	37	66	0.04	28.16	29.79	S	8.8	40.9	17.02	78.1	83.2	88	79
	94*	70*	81.3*	66.5*	<- Monthly Averages ->					28.34*	29.98*	S	* 11.0*	49.9*	21.32*	78.4*	83.7*	91*	78*	
Temperature - Highest: 102* Lowest: 58*					Degree Days - Total HDD: 0* Total CDD: 527*					Number of Days With: Tmax ≥ 90: 24* Rainfall ≥ 0.01 inch: 7* Tmax ≤ 32: 0* Rainfall ≥ 0.10 inch: 4* Tmin ≤ 32: 0* Avg Wind Speed ≥ 10 mph: 18* Tmin ≤ 0: 0* Max Wind Speed ≥ 30 mph: 12*										
Rainfall: Monthly Total: 2.45* in. Greatest 24 Hr: 1.83* in.					Humidity - Highest: 98* Lowest: 26*															

MESONET CLIMATOLOGICAL DATA SUMMARY (HOBA) Hobart Latitude: 34-59-22								September 2021 Nearest City: 4.0 SE Hobart Longitude: 99-03-10						Time Zone: Midnight-Midnight CST County: Kiowa Elevation: 1552 feet						
DAY	TEMPERATURE ( F )				DEG DAYS		HUMIDITY (%)			RAIN (in)	PRESSURE (in)		WIND DIR	SPEED (mph)	SOLAR (MJ/m2)	4" SOIL TEMPERATURES				
	MAX	MIN	AVG	DEWPt	HDD	CDD	MAX	MIN	AVG		STN	MSL				SOD	BARE	MAX	MIN	
1	101	70	86.2	67.1	0	21	91	28	57	0.00	28.19	29.82	S	9.5	23.0	23.92	78.6	85.1	94	78
2	98	75	86.5	68.2	0	21	82	37	56	0.00	28.25	29.88	SSE	14.4	28.3	19.19	79.3	86.3	91	81
3	99	75	86.9	67.8	0	22	82	33	55	0.00	28.27	29.91	S	15.1	32.0	22.55	79.6	87.1	94	81
4	97	73	82.8	69.0	0	20	85	38	65	0.00	28.29	29.93	S	12.4	27.2	20.55	79.9	87.4	95	82
5	89	67	77.1	62.6	0	13	87	34	64	0.00	28.37	30.02	ENE	9.0	21.3	19.60	79.3	86.0	92	81
6	95	60	79.0	61.5	0	13	90	27	59	0.00	28.37	30.02	SSE	7.4	21.1	22.83	77.7	83.9	92	76
7	97	72	83.8	63.7	0	20	75	35	52	0.00	28.29	29.93	S	11.4	24.3	22.46	78.6	85.8	93	80
8	92	64	78.1	52.1	0	13	75	19	44	0.00	28.41	30.05	NE	11.4	31.5	23.13	78.2	85.6	93	80
9	93	58	76.6	50.3	0	11	77	22	43	0.00	28.42	30.07	S	9.9	28.8	22.52	76.4	81.9	89	75
10	96	68	81.3	53.2	0	17	61	25	40	0.00	28.38	30.02	S	15.8	33.0	19.59	76.5	82.3	88	77
11	98	68	81.4	54.2	0	18	61	24	41	0.00	28.39	30.03	S	17.2	30.2	NA	76.6	82.1	88	77
12	95	62	78.5	53.7	0	13	78	20	46	0.00	28.41	30.06	S	12.9	25.7	21.96*	76.5	81.8	89	75
13	94	64	79.5	58.5	0	14	79	25	52	0.00	28.36	30.01	S	14.3	29.1	NA	76.7	82.2	89	76
14	91	67	78.8	63.0	0	14	86	36	61	0.00	28.30	29.94	S	12.8	25.8	22.63	77.2	83.0	90	77
15	90*	68*	75.7*	64.4*	0*	14*	95*	38*	71*	0.02*	28.32*	29.96*	SE *	6.5*	16.3*	NA	77.7*	83.0*	91*	78*
16	93	65	78.8	62.1	0	14	88	34	60	0.00	28.29	29.93	SSE	9.0	31.3	20.54	77.5	83.0	91	76
17	95	68	80.7	62.8	0	17	85	33	57	0.00	28.36	30.01	S	10.1	21.0	20.14	78.1	84.0	92	77
18	93	64	78.0	59.4	0	14	88	28	57	0.00	28.45	30.09	E	5.3	26.8	21.52	78.0	84.2	93	76
19	95	63	80.4	57.5	0	14	78	26	49	0.00	28.28	29.92	SSE	9.1	23.8	21.67	77.6	83.4	92	75
20	99	73	83.3	58.4	0	21	75	25	46	0.00	28.19	29.82	S	15.5	39.2	18.39	78.1	84.1	91	79
21	82	56	70.0	41.5	0	4	54	21	37	0.00	28.61	30.26	NNE	17.7	35.9	21.21	76.4	80.3	86	75
22	81	44	63.7	36.9	3	0	82	18	42	0.00	28.65	30.30	WNW	5.4	14.3	22.59	74.0	76.7	86	68
23	87	49	69.8	37.8	0	3	66	17	34	0.00	28.43	30.08	SSE	11.1	26.7	21.88	73.3	76.2	85	68
24	88	53	70.8	41.1	0	6	62	19	37	0.00	28.39	30.04	S	10.0	23.7	19.12	73.2	76.2	84	69
25	92	53	72.3	45.5	0	7	79	18	44	0.00	28.44	30.09	S	9.1	21.2	21.10	73.4	77.0	86	69
26	93	58	76.0	45.8	0	11	67	17	37	0.00	28.35	30.00	S	13.2	30.3	21.30	73.7	77.9	86	71
27	94	64	77.9	50.5	0	14	57	26	40	0.00	28.28	29.92	S	14.4	26.1	15.91	74.0	78.3	85	72
28	95	64	76.7	56.8	0	15	95	23	54	0.65	28.20	29.84	S	11.5	39.1	17.98	74.7	79.6	88	73
29	87	65	74.8	64.8	0	11	94	50	73	0.04	28.18	29.82	SSE	14.0	32.0	19.20	74.6	75.2	80	70
30	81	64	70.8	64.0	0	8	94	57	80	0.00	28.35	29.99	ENE	11.0	24.7	10.86	74.3	74.3	80	70
	93*	64*	77.9*	56.5*	<- Monthly Averages ->					28.35*	29.99*	S *	11.5*	39.2*	20.53*	76.7*	81.8*	89*	75*	
Temperature - Highest: 101* Lowest: 44*					Degree Days - Total HDD: 3* Total CDD: 399*					Number of Days With: Tmax ≥ 90: 23* Rainfall ≥ 0.01 inch: 3* Tmax ≤ 32: 0* Rainfall ≥ 0.10 inch: 1* Tmin ≤ 32: 0* Avg Wind Speed ≥ 10 mph: 20* Tmin ≤ 0: 0* Max Wind Speed ≥ 30 mph: 10*										
Rainfall: Monthly Total: 0.71* in. Greatest 24 Hr: 0.65* in.					Humidity - Highest: 95* Lowest: 17*															

MESONET CLIMATOLOGICAL DATA SUMMARY (HOBA) Hobart Latitude: 34-59-22								October 2021 Nearest City: 4.0 SE Hobart Longitude: 99-03-10					Time Zone: Midnight-Midnight CST County: Kiowa Elevation: 1552 feet							
DAY	TEMPERATURE ( F )				DEG DAYS		HUMIDITY (%)			RAIN (in)	PRESSURE (in)		WIND SPEED (mph)	SOLAR (MJ/m2)	4" SOIL TEMPERATURES					
	MAX	MIN	AVG	DEWPt	HDD	CDD	MAX	MIN	AVG		STN	MSL			SOD	BARE	MAX	MIN		
1	79	63	68.9	61.2	0	6	94	52	78	0.02	28.44	30.08	E	5.5	14.8	10.88	73.4	73.7	80	69
2	78	59	67.5	60.0	0	3	98	49	79	0.97	28.42	30.07	WNW	6.3	27.4	17.24	72.0	72.0	77	67
3	83	55	68.0	54.8	0	4	97	29	68	0.01	28.44	30.09	NW	6.1	23.8	20.25	71.5	69.9	77	63
4	86	54	68.7	52.8	0	5	94	28	62	0.00	28.43	30.08	S	5.8	16.1	19.95	71.0	70.8	81	62
5	84	56	68.0	49.9	0	5	85	26	58	0.00	28.47	30.11	E	5.0	17.3	19.67	70.7	72.0	82	64
6	83	52	67.1	50.3	0	3	93	27	60	0.00	28.43	30.08	ESE	4.3	13.7	19.48	70.0	72.2	82	63
7	90	61	74.9	53.9	0	11	71	29	50	0.00	28.35	30.00	SSE	13.0	26.8	16.61	70.2	73.8	81	67
8	97	65	79.4	54.4	0	16	70	21	46	0.00	28.28	29.92	S	15.3	33.5	18.43	70.7	76.1	84	69
9	95	65	79.6	55.2	0	15	72	24	46	0.00	28.16	29.79	S	18.2	34.0	18.87	70.9	77.3	84	71
10	85	57	69.3	57.9	0	6	99	44	69	1.62	28.03	29.66	S	16.1	41.6	13.94	70.1	74.5	82	67
11	78	50	63.9	48.5	1	0	93	28	62	0.00	28.20	29.83	SE	8.0	24.7	19.24	68.2	67.3	75	61
12	80	55	68.9	60.1	0	2	90	57	74	0.23	28.13	29.76	SE	17.5	46.2	7.73	68.1	65.6	70	61
13	75	54	64.8	53.0	0	0	96	29	69	0.57	28.13	29.76	S	10.3	39.2	12.53	68.5	67.2	70	63
14	76	52	63.0	57.2	1	0	99	57	83	0.23	28.21	29.84	S	8.6	23.5	14.37	67.8	65.3	71	61
15	68	45	57.4	40.9	8	0	91	29	57	0.00	28.49	30.14	N	14.7	32.0	18.44	66.6	62.1	66	57
16	72	37	53.8	36.2	11	0	93	19	59	0.00	28.69	30.35	WNW	7.0	15.3	19.01	64.2	58.1	66	51
17	75	43	57.0	38.4	6	0	85	23	54	0.00	28.58	30.24	SSW	9.8	22.6	17.75	63.9	57.8	65	52
18	76	45	60.2	42.5	5	0	83	30	55	0.00	28.39	30.03	S	14.4	28.9	17.06	63.5	58.1	65	52
19	79	56	67.1	54.1	0	2	81	49	64	0.00	28.28	29.92	S	18.8	35.3	17.22	64.2	63.5	71	57
20	74	49	62.5	47.7	3	0	97	28	63	0.00	28.44	30.09	NE	11.8	29.8	16.81	65.2	66.0	73	62
21	73	44	58.4	43.2	7	0	90	31	62	0.00	28.55	30.20	E	5.7	14.3	13.06	63.8	62.8	70	56
22	83	51	66.9	53.8	0	2	86	44	65	0.00	28.37	30.02	S	11.3	25.4	15.98	64.3	65.7	74	59
23	88	63	73.9	60.8	0	10	91	37	66	0.00	28.13	29.76	S	17.6	34.2	15.74	66.1	69.9	76	64
24	78	54	69.1	54.8	0	1	85	38	63	0.00	28.15	29.79	S	13.4	27.9	14.89	67.0	70.2	75	66
25	80	49	62.7	49.8	1	0	93	31	66	0.00	28.32	29.96	SE	9.2	22.7	16.47	65.3	66.3	73	60
26	86	63	73.3	63.4	0	9	96	49	73	0.63	28.05	29.68	SSE	21.5	45.8	14.26	66.5	70.0	76	65
27	66	52	59.3	43.5	6	0	94	37	58	0.00	28.02	29.65	NNW	19.3	41.9	12.05	65.8	62.9	69	57
28	70	52	59.3	28.0	4	0	44	16	31	0.00	28.28	29.92	NNW	25.3	52.8	16.55	62.6	56.8	62	53
29	68	42	54.3	25.9	10	0	73	17	36	0.00	28.41	30.05	NW	15.1	36.3	17.13	60.7	57.2	64	51
30	75	36	53.7	34.5	10	0	87	22	55	0.00	28.28	29.92	S	8.2	21.1	16.60	59.6	57.2	66	49
31	63	45	52.9	42.0	11	0	86	49	67	0.00	28.47	30.12	NE	14.8	31.1	15.77	59.8	58.1	65	53
	79	52	65.0	49.3	<- Monthly Averages ->				28.32	29.96	S	12.2	52.8	16.26	66.8	66.5	73	60		
Temperature - Highest: 97 Lowest: 36					Degree Days - Total HDD: 84 Total CDD: 101					Number of Days With: Tmax ≥ 90: 3 Rainfall ≥ 0.01 inch: 8 Tmax ≤ 32: 0 Rainfall ≥ 0.10 inch: 6 Tmin ≤ 32: 0 Avg Wind Speed ≥ 10 mph: 18 Tmin ≤ 0: 0 Max Wind Speed ≥ 30 mph: 13										
Rainfall: Monthly Total: 4.28 in. Greatest 24 Hr: 1.62 in.					Humidity - Highest: 99 Lowest: 16															

MESONET CLIMATOLOGICAL DATA SUMMARY (HOBA) Hobart Latitude: 34-59-22								November 2021 Nearest City: 4.0 SE Hobart Longitude: 99-03-10						Time Zone: Midnight-Midnight CST County: Kiowa Elevation: 1552 feet						
DAY	TEMPERATURE ( F )				DEG DAYS		HUMIDITY (%)			RAIN (in)	PRESSURE (in)		WIND DIR	SPEED (mph)	SOLAR (MJ/m2)	4" SOIL TEMPERATURES				
	MAX	MIN	AVG	DEWPt	HDD	CDD	MAX	MIN	AVG		STN	MSL				SOD	BARE	MAX	MIN	
1	63	44	51.6	39.0	12	0	82	48	63	0.00	28.58	30.24	NE	12.9	26.5	14.85	59.8	58.8	66	54
2	45	41	42.8	38.8	22	0	97	75	86	0.07	28.67	30.33	NE	15.0	28.7	2.20	58.5	53.9	57	51
3	46	41	43.6	42.1	21	0	98	89	95	0.03	28.66	30.32	NE	8.4	16.4	2.66	57.3	51.3	53	50
4	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00*	NA	NA	SSE*	NA	15.4*	NA	NA	NA	NA	NA
5	61	38	48.4	41.6	16	0	99	50	80	0.01	28.53	30.18	S	11.2	26.2	14.71	57.2	52.9	60	48
6	70	39	53.4	43.4	11	0	93	43	71	0.00	28.52	30.17	S	10.8	22.7	15.22	57.3	55.0	63	48
7	78	44	60.0	45.1	4	0	96	25	63	0.00	28.43	30.07	S	16.4	31.4	15.46	58.1	57.8	65	51
8	77	50	62.3	50.1	2	0	92	40	67	0.00	28.42	30.07	S	17.6	34.1	14.73	58.9	60.2	66	55
9	70	50	59.2	51.4	5	0	95	52	77	0.00	28.44	30.08	NE	7.7	20.0	12.49	60.0	62.2	68	58
10	72	49	59.0	51.8	5	0	99	50	79	0.00	28.21	29.85	S	13.9	31.9	6.90	60.0	60.4	65	58
11	65	40	51.4	36.0	12	0	93	26	61	0.00	28.45	30.10	NW	7.9	18.7	14.01	58.8	57.7	64	53
12	62	35	48.6	23.9	16	0	77	14	43	0.00	28.56	30.22	NNW	13.2	40.7	14.87	57.3	55.3	61	51
13	68	29	48.5	25.3	16	0	79	20	45	0.00	28.50	30.15	S	11.1	26.6	14.17	55.3	52.9	60	46
14	63	39	50.8	32.6	14	0	75	29	52	0.00	28.49	30.14	NE	8.1	29.3	13.57	55.6	55.0	61	50
15	76	37	54.8	38.3	9	0	82	27	57	0.00	28.40	30.04	SSW	8.8	18.8	13.85	55.5	55.2	63	49
16	86	50	65.0	43.3	0	3	94	17	53	0.00	28.14	29.78	S	17.1	35.7	13.37	56.8	58.7	65	53
17	59	38	51.4	27.5	16	0	77	21	42	0.00	28.37	30.02	NNE	18.5	41.7	11.07	56.7	57.0	60	53
18	55	32	41.9	12.9	22	0	47	15	32	0.00	28.82	30.48	N	8.5	17.6	14.16	54.5	51.9	58	47
19	63	30	46.8	21.2	19	0	63	19	38	0.00	28.59	30.24	S	16.9	36.2	11.76	53.0	50.0	55	45
20	72	43	54.8	33.5	7	0	66	24	46	0.00	28.33	29.97	S	12.0	27.2	12.31	54.0	54.2	61	49
21	61	32	49.7	31.0	18	0	77	25	51	0.00	28.57	30.23	N	13.1	31.1	6.98	54.4	53.7	57	50
22	68	26	45.9	27.9	18	0	87	24	55	0.00	28.62	30.27	SW	10.2	26.8	13.52	52.7	50.3	57	44
23	72	38	55.5	29.6	10	0	69	19	41	0.00	28.34	29.99	S	17.4	38.0	13.21	53.3	53.1	59	47
24	68	48	57.3	36.4	7	0	59	28	46	0.00	28.26	29.90	S	18.5	32.4	6.41	54.6	55.9	59	53
25	53	27	41.0	22.4	25	0	70	27	49	0.00	28.76	30.42	N	13.9	39.5	13.44	53.4	51.8	56	47
26	68	24	44.5	19.7	19	0	77	17	43	0.00	28.55	30.20	S	12.2	26.8	13.34	51.4	48.4	55	42
27	68	41	50.8	25.4	11	0	57	19	39	0.00	28.38	30.03	SSW	9.3	17.8	9.45	52.3	51.4	57	47
28	63	34	48.0	27.8	16	0	68	25	47	0.00	28.59	30.24	N	8.0	16.3	12.94	52.5	51.6	58	46
29	75	37	53.3	31.6	9	0	72	21	47	0.00	28.43	30.07	SSW	10.2	17.5	12.86	52.8	52.7	60	47
30	76	39	54.9	35.9	8	0	81	22	53	0.00	28.35	29.99	SSW	8.5	18.2	12.82	53.6	54.6	61	49
	66*	38*	51.5*	34.0*	<- Monthly Averages ->				28.48*	30.13*	S	*	12.3*	41.7*	11.98*	55.7*	54.6*	60*	50*	
Temperature - Highest: 86* Lowest: 24*					Degree Days - Total HDD: 369* Total CDD: 3*					Number of Days With: Tmax ≥ 90: 0* Rainfall ≥ 0.01 inch: 3* Tmax ≤ 32: 0* Rainfall ≥ 0.10 inch: 0* Tmin ≤ 32: 7* Avg Wind Speed ≥ 10 mph: 20* Tmin ≤ 0: 0* Max Wind Speed ≥ 30 mph: 11*										
Rainfall: Monthly Total: 0.11* in. Greatest 24 Hr: 0.07* in.					Humidity - Highest: 99* Lowest: 14*															