

# **Seedless Watermelon Variety Trial Results 2020**

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## 2020 University of Delaware Seedless Watermelon Variety Trial

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### Introduction

The 2020 Seedless Watermelon Variety Trial included 31 varieties from nine participating companies. The purpose of this trial was to evaluate seedless watermelon varieties for yield, quality and maturity.

### Materials and Methods

#### *Trial Design*

The trial was a Randomized Complete Block with 3 replications. Plots were 1 row, 30' in length.

#### *Location and Soil Type*

Growers field next to the University of Delaware Thurman Adams Research Farm, Carvel Research and Education Center, Georgetown, Delaware. The soil type was a Rosedale Loamy Sand.

#### *Cultural Practices*

The field was fertilized and limed according to soil test results. Black plastic mulch and trickle irrigation were laid on 7' centers. Additional nitrogen fertilizer was applied by fertigation during fruiting.

Trial entries are listed in Table 1. Entries were seeded in the greenhouse on April 21, 2020. Plants were transplanted to the field on May 22, 2020. Field plots were one row (7 ft) wide and 30 ft long. Plots were arranged in a randomized complete block design with four replications. In-row spacing for seedless plants was 3 ft with 10 plants per plot. Four SP-7 pollinizer plants were planted in each plot and one between plots in the following arrangement:  
s 7 s s s 7 s s s 7 s s 7. "7" designates Sp-7. The border rows next to the drive rows, which separated the replications, were planted in the triploid variety 'Fascination', with the same the pollenizers, in the same arrangement as the experimental plots.

Herbicides applied with a shielded sprayer to row middles on 5-29-20 were Gramoxone 2 qt/A, Reflex 12 oz/A, Dual 1.5 pt/A, and Prowl 2 pt/A. Select Max was applied post plant one time at a rate of 16 oz/A. A comprehensive disease, insect and mite control program was used for the trial by the grower. Irrigation was applied regularly as determined by the grower.

The summer growing season was hot in July with 23 days over 90 F. Rainfall for the growing season was 15.6 inches with 11.49 inches during July and August. Disease pressure was moderate and yields were high.

## ***Harvest***

Fruits were harvested four times. The first harvest was on July 30-31, 70 days after transplanting (DAT), the second harvest was 78 DAT, the third harvest was 90 DAT and the final harvest was on August 26 at 97 DAT. The weight of each watermelon harvested was recorded individually. Five marketable watermelons from each plot were cut and evaluated for presence of hollow heart, hard seeds and soluble solids levels. Watermelons were cut lengthwise and then crosswise and the number of hard seeds visible on the surface of the four pieces were counted. Soluble solids were measured using a hand-held refractometer. Hollow heart was rated on a 1-5 scale with 1 being no hollow heart and 5 being severe hollow heart.

## **Results**

Marketable yields excluding misshapen culls and fruit less than 9 lbs are reported in Table 2 in both pounds per acre and fruit per acre for each variety. Yields in the trial ranged from 62,142 to 135,845 lbs/A.

The highest yielding varieties in the trial in terms of Marketable Yield in lbs/A were ORS 6406 B, Fascination, ORS 6375 A, WDL 8415, Charismatic, Red Amber, Captivation, Kingman, Exclamation, Shoreline, Orchid Sweet, Excursion, WDL 6421, WDL 8423, and E 26 C000124. This high yielding group ranged from 135,845 to 100,392 lbs per acre.

The highest yielding varieties in terms of Marketable Yield in fruit/A for standard sized watermelons were ORS 6406 B, F 2730, Fascination, WDL 8415, ORS 6375 A, Charismatic, Captivation, Red Amber, 1975, Shoreline, WDL 8423, Exclamation, Kingman, Excursion, Summer Breeze, and WDL 6421. This high group ranged from 9,589 to 7,008 fruits per acre. Mini watermelons yield in melons per acre were: Orchid Sweet (10,799), Sirius (10,718), and F 2730 (8,702).

Table 3 reports the percent of total harvest for each harvest. The following varieties produced more than 40% of their yield on the first harvest: WDL 8415, ORS 6406 B, and WDL 7408. Varieties that had later or extended harvest (35% or more harvested in the third and fourth harvest) were 7197, Sirius, 3F 2186, WDL 6421, Fascination, Wolverine 2, ORS 6375 A, WDL 7403, WDL 6411, Guardsman, Captivation, Joy Ride, Wolverine 1, WDL 7408, and Excursion

Table 4 lists the varieties according to average fruit weight and gives the percentage of fruit in each of four weight classes: 60-count (9.0-13.5 lbs), 45-count (13.6-17.5 lbs), 36-count (17.6-21.4 lbs) and 30-count (>21.5 lbs). A 90 count (less than 9 lbs) group was used to evaluate mini watermelons in the trial. In general, fruit weights were lighter in 2020 than in 2019. Medium-large fruited varieties averaging over 15 pounds included WDL 6411, Fascination, Joy Ride, WDL 7408, and WDL 7403. Small-fruited varieties (not including Sirius, Orchid Sweet, or F 2730 minis) averaging under 13.5 pounds were: Wolverine, 1975, and 3F 2186. All other varieties were between 13.6 to 15.0 average pounds per fruit.

Varieties that had greater than 35% of the melons harvested in the 45-count class were: Prime,

E 26 C000124, WDL 6411, Charismatic, Exclamation, WDL 8415, and Fascination. Varieties with 50% or greater percentage of small-fruited melons (60-count) included 1975, Wolverine 2, Wolverine 1, Cracker Jack, WDL 8423, Shoreline, Captivation, WDL 6429, 7197, Guardsman, Summer Breeze, ORS 6375 A, Excursion, and ORS 6406 B. Varieties with more than 25% 30 and 36-count fruit were WDL 7403, Joy Ride, WDL 6411, WDL 7408, WDL 6421, and ORS 6375 A.

Table 5 lists the varieties according to their soluble solid measurements. Soluble solids were lower in 2020 than in 2019 largely due to cloudy weather during fruit fill. Soluble solids averages are based on a 20-fruit sample (5 fruit per replication). Those varieties with soluble solids 11.0 or greater were Summer Breeze and Joy Ride. All other varieties had average soluble solids of over 10% except for WDL 8423 B (9.9), WDL 6411 (9.8) and Sirius (9.8).

Table 6 lists the varieties according to average severity of hollow heart. Hollow heart averages are based on a 20-fruit sample (5 fruit per replication). No hollow heart was observed in Excursion, Sirius, Captivation, Kingman, WDL 7408, E 26 C000124, WDL 6421, ORS 6406 B, WDL 7403, Exclamation, and Red Amber. The variety F 2730 had the highest incidence of hollow heart rated 3 to 5 (66%) followed by Orchid Sweet (28 %). Those additional varieties with one or more fruit with major or severe hollow heart (10% or more rating 3, 4 and 5) were WDL 8423 B, WDL 6429, Wolverine 2, 3F 2186, Fascination, 1975, Guardsman, and Charismatic.

Table 7 lists the varieties according to the percent of fruit with enough hard seeds to render them unmarketable. Only Captivation had significant numbers of fruit over standard for hard seed.

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**Table 1. Entries in the 2020 University of Delaware Watermelon Variety Trial**

<b>Variety</b>	<b>Entering Company</b>
Enza Zaden	E26C.00063 (Cracker Jack)
Enza Zaden	Red Amber
Enza Zaden	E 26 C000124
Highmark	Wolverine
Known You	Prime
Known You	Orchid Sweet (yellow)
Known You	F2730
Known You	3F-2186
Nunhems	7187 (standard check)
OriGene	ORS 6375 A
OriGene	ORS 6406 B
Sakata	Charismatic
Sakata	Kingman
Seedway	Guardsman
Seedway	Cracker Jack
Seedway	1975
Seminis	Joy Ride
Seminis	Shoreline
Seminis	Summer Breeze
Syngenta	Captivation
Syngenta	Fascination (standard check)
Syngenta	Exclamation
Syngenta	Excursion
Syngenta	Sirius
Syngenta	WDL6421
Syngenta	WDL6411(Scarlet Crisp)
Syngenta	WDL6429
Syngenta	WDL8423
Syngenta	WDL7403
Syngenta	WDL7408
Syngenta	WDL8415

**Table 2. 2020 Seedless Watermelon Variety Trial: Varieties by Marketable Yield (all marketable fruit over 9 lbs<sup>1</sup>) in Lbs/a and Fruits/a and Fruits per Harvest**

Variety	Yields and Harvest Distribution					
			Fruits per harvest			
	Marketable lbs/a	Marketable Fruits/a	Harvest 1 70 DAT	Harvest 2 78 DAT	Harvest 3 90 DAT	Harvest 4 97 DAT
ORS 6406 B	135845 a	9589 ab	4110	2579	2095	806
Fascination	128161 ab	8298 abcd	2256	2739	2014	1289
ORS 6375 A	117824 abc	7976 bcde	1692	3223	2578	483
WDL 8415	117776 abc	8056 bcd	3545	2256	1611	645
Charismatic	113639 abc	7814 bcdef	1933	3303	2256	322
Red Amber	108669 abcd	7492 bcdef	1772	3786	1208	725
Captivation	106330 abcd	7734 bcdef	1208	3706	1853	967
Kingman	106221 abcd	7250 bcdefg	1692	3061	1692	806
Exclamation	105894 abcd	7250 bcdefg	1772	3383	1530	564
Shoreline	104903 abcd	7330 bcdefg	1692	3303	1208	1128
Orchid Sweet	104783 abcd	10799 a	3546	3788	2982	484
Excursion	104573 abcd	7088 bcdefg	2416	2175	2416	81
WDL 6421	104487 abcd	7008 bcdefg	2094	2094	2014	805
WDL 8423	102396 abcde	7330 bcdefg	1732	3101	1531	967
E 26 C000124	100392 abcde	6927 cdefg	2416	3061	1047	403
7197	99544 abcde	6846 cdefg	805	2255	1712	2054
Guardsman	98852 abcde	6846 cdefg	1853	2497	1853	644
Summer Breeze	97308 abcde	7008 bcdefg	2255	2900	1450	403
WDL 6411	97175 abcde	6120 cdefg	1933	1933	1450	805
WDL 7403	96046 abcde	6282 cdefg	2094	1852	1611	725
WDL 6429	94091 bcde	6685 cdefg	2416	2336	967	967
1975	92578 bcde	7361 bcdefg	1808	3487	904	1162
Prime	88142 bcde	6040 defg	1933	3060	886	161
Cracker Jack	83796 cde	6040 defg	1530	2416	1450	644
WDL 7408	82567 cde	5394 efg	2174	1288	1449	483
Joy Ride	81628 cde	5314 fg	1852	1530	1449	483
Wolverine 2	80413 cde	6120 cdefg	2335	1369	1530	886
Sirius	69998 de	10718 a	1612	4352	3465	1289
3F 2186	69870 de	6282 cdefg	2013	1530	1772	966
F 2730	67676 de	8702 abc	2256	3465	2337	645
Wolverine 1	62142 e	4749 g	1851	1187	1140	570
<i>p-value</i>	<i>0.012</i>	<i>0.001</i>				
<b>LSD<sub>0.05</sub></b>	<b>41754</b>	<b>2241</b>				

**Table 3. 2020 Seedless Watermelon Variety Trial: Percent of Total Harvested at Each Harvest by Number**

Variety	Percent of Total Harvested at Each Harvest by Number			
	Harvest 1 70 DAT	Harvest 2 78 DAT	Harvest 3 90 DAT	Harvest 4 97 DAT
1975	25	47	12	16
7197	12	33	25	30
3F 2186	32	24	28	15
Captivation	16	48	24	13
Charismatic	25	42	29	4
Cracker Jack	25	40	24	11
E 26 C000124	35	44	15	6
Exclamation	24	47	21	8
Excursion	34	31	34	1
F 2730	26	40	27	7
Fascination	27	33	24	16
Guardman	27	36	27	9
Joy Ride	35	29	27	9
Kingman	23	42	23	11
Orchid Sweet	33	35	28	4
ORS 6375 A	21	40	32	6
ORS 6406 B	43	27	22	8
Prime	32	51	15	3
Red Amber	24	51	16	10
Shoreline	23	45	16	15
Sirius	15	41	32	12
Summer Breeze	32	41	21	6
WDL 6411	32	32	24	13
WDL 6421	30	30	29	11
WDL 6429	36	35	14	14
WDL 7403	33	29	26	12
WDL 7408	40	24	27	9
WDL 8415	44	28	20	8
WDL 8423	24	42	21	13
Wolverine 1	39	25	24	12
Wolverine 2	38	22	25	14



**Table 4. 2020 Seedless Watermelon Variety Trial: Varieties by Average Fruit Weight and Percent of Fruit in Each Size Class**

Variety	Mean Marketable Weight (lbs)		Percent of Fruit in Each Size Class				
			30 Count 21.5 lbs plus	36 Count 17.6-21.4 lbs	45 Count 13.6-17.5 lbs	60 Count 9.0-13.5 lbs	90 Count <9.0 lbs
WDL 6411	15.9	a	9.2	17.1	38.2	35.5	0.0
Fascination	15.4	ab	15.5	8.7	35.0	40.8	0.0
Joy Ride	15.4	abc	12.1	15.2	28.8	43.9	0.0
WDL 7408	15.3	abcd	17.9	7.5	25.4	49.3	0.0
WDL 7403	15.3	abc	12.8	17.9	25.6	43.6	0.0
WDL 6421	14.9	abcde	11.5	13.8	26.4	48.3	0.0
ORS 6375 A	14.8	abcdef	10.1	15.2	22.2	52.5	0.0
Excursion	14.7	abcdef	8.0	13.6	26.1	52.3	0.0
Kingman	14.7	bcdef	7.8	13.3	31.1	47.8	0.0
WDL 8415	14.6	bcdef	8.0	11.0	35.0	46.0	0.0
Prime	14.6	bcdef	2.7	16.0	38.7	42.7	0.0
Exclamation	14.6	bcdef	4.4	10.0	37.8	47.8	0.0
7197	14.5	bcdef	14.1	7.1	24.7	54.1	0.0
Charismatic	14.5	bcdef	7.2	11.3	38.1	43.3	0.0
Red Amber	14.5	bcdef	6.5	11.8	32.3	49.5	0.0
E 26 C000124	14.5	bcdef	5.8	11.6	38.4	44.2	0.0
Guardman	14.4	bcdef	9.4	8.2	29.4	52.9	0.0
Shoreline	14.3	cdefg	9.9	6.6	25.3	58.2	0.0
ORS 6406 B	14.2	defg	5.9	11.8	31.9	50.4	0.0
WDL 6429	14.1	defg	2.4	15.7	27.7	54.2	0.0
WDL 8423	14.0	efg	6.0	11.0	24.2	58.8	0.0
Summer Breeze	13.9	efg	4.6	11.5	31.0	52.9	0.0
Cracker Jack	13.9	efg	10.7	10.7	18.7	60.0	0.0
Captivation	13.7	fgh	1.0	10.4	32.3	56.3	0.0
Wolverine 2	13.1	gh	3.9	6.6	25.0	64.5	0.0
Wolverine 1	13.1	gh	3.4	1.7	32.2	62.7	0.0
1975	12.5	h	3.5	5.3	14.0	77.2	0.0
3F 2186	11.1	i	3.8	2.6	19.2	46.2	28.2
Orchid Sweet	9.7	j	0.7	6.0	9.0	39.6	44.8
F 2730	7.8	k	0.0	0.0	2.8	26.9	70.4
Sirius	6.5	l	0.0	0.0	0.8	16.5	82.7
<i>p-value</i>	<i>&lt;0.001</i>						
<i>LSD 0.05</i>	<i>1.2</i>						

**Table 5. 2020 Seedless Watermelon Variety Trial: Varieties by Soluble Solid Content**

<b>Variety</b>	<b>% Soluble Solids</b>	
Summer Breeze	11.4	a
Joy Ride	11.0	ab
WDL 6429	10.9	abc
Fascination	10.9	abcde
Charismatic	10.9	abcd
Cracker Jack	10.7	bcdef
WDL 6421	10.7	bcdef
WDL 7408	10.7	bcdefg
ORS 6406 B	10.7	bcdefg
WDL 7403	10.7	bcdefg
7197	10.6	bcdefgh
Prime	10.6	bcdefgh
1975	10.6	bcdefgh
Captivation	10.6	bcdefgh
Exclamation	10.5	bcdefgh
Shoreline	10.5	bcdefgh
Red Amber	10.5	bcdefghi
F 2730	10.5	bcdefghi
3F 2186	10.4	bcdefghi
WDL 8415	10.4	cdefghij
Orchid Sweet	10.4	cdefghij
Wolverine 1	10.3	cdefghijk
Kingman	10.3	cdefghij
Wolverine 2	10.3	defghij
Excursion	10.3	defghijk
E 26 C000124	10.3	efghijk
ORS 6375 A	10.2	fghijk
Guardsman	10.1	ghijk
WDL 8423 A	10.1	hijk
WDL 8423 B	9.9	ijk
WDL 6411	9.8	jk
Sirius	9.8	K
<i>p-value</i>	<i>&lt;0.001</i>	
<i>LSD 0.05</i>	<i>0.69</i>	

**Table 6. 2020 Seedless Watermelon Variety Trial: Hollow Heart (HH) Severity Rating (1 = no HH, 2 = minor HH, 3 moderate HH, 4 = major HH, 5 = Severe HH)**

Variety	Hollow Heart Severity Rating (mean)		Percent Hollow Heart By Severity Rating			
			2	3	4	5
F 2730	3.3	a	13	9	22	35
Orchid Sweet	2.1	b	12	4	4	20
Wolverine 2	1.7	bc	4	4	4	8
3F 2186	1.6	cd	10	5	0	10
WDL 8423 B	1.6	cd	5	9	0	9
WDL 6429	1.6	cd	5	9	0	9
Guardsman	1.5	cde	4	0	0	11
Charismatic	1.4	cdef	10	5	0	5
WDL 6411	1.4	cdef	0	0	3	6
Fascination	1.4	cdef	0	6	0	6
1975	1.2	cdef	0	6	6	0
Prime	1.2	cdef	11	0	5	0
ORS 6375 A	1.2	cdef	4	0	0	4
WDL 8423 A	1.2	def	10	0	3	0
Exclamation	1.1	def	11	0	0	0
Joy Ride	1.1	def	0	0	5	0
Summer Breeze	1.1	def	0	0	5	0
7197	1.1	def	8	0	0	0
Cracker Jack	1.1	ef	0	4	0	0
WDL 8415	1.1	ef	0	4	0	0
Wolverine 1	1.1	ef	6	0	0	0
Shoreline	1.1	ef	5	0	0	0
Excursion	1.0	f	0	0	0	0
Sirius	1.0	f	0	0	0	0
Captivation	1.0	f	0	0	0	0
Kingman	1.0	f	0	0	0	0
WDL 7408	1.0	f	0	0	0	0
E 26 C000124	1.0	f	0	0	0	0
WDL 6421	1.0	f	0	0	0	0
ORS 6406 B	1.0	f	0	0	0	0
WDL 7403	1.0	f	0	0	0	0
Red Amber	1.0	f	0	0	0	0
<i>p-value</i>	<i>0.001</i>					
<i>LSD 0.05</i>	<i>0.51</i>					







**Table 7. 2020 Seedless Watermelon Variety Trial: Percent of Sampled Fruit Above Standard for Mature Seeds\***

<b>Variety</b>	<b>% Above Standard for Mature Seeds</b>
Captivation	10
Cracker Jack	5
Sirius	5
1975	5
Exclamation	5

\* the USDA standard for seedless watermelons: “Watermelons of a size greater than ten (10) pounds may have 4 or fewer mature seeds, not to include pips/caplets, on the face of the melon which has been cut into four equal sections (one lengthwise cut and one crosswise cut)”

## APPENDIX A:

### Some Photographs of Varieties in the 2020 Seedless Watermelon Variety Trial

	
Fascination	ORS 6375 A
	
Captivation	Red Amber
	
Charismatic	Summer Breeze



**Excursion**



**Guardzman**



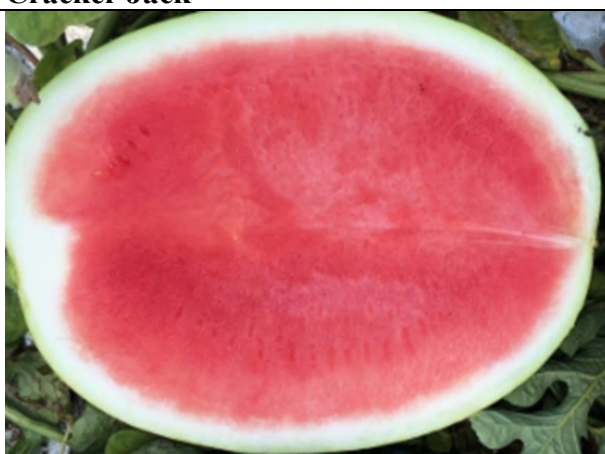
**ORS 6406 B**



**Cracker Jack**









**WDL 8423**



**Shoreline**



	
<b>Prime</b>	<b>Sirius</b>
	
<b>Orchid Sweet</b>	<b>WDL 7403</b>
	
<b>Joy Ride</b>	<b>Wolverine</b>



**Kingman**



**1975**



**WDL 6429**



**3F-2186**



**WDL 6421**



**WDL 7408**



**APPENDIX B:**  
**Weather Summary for the 2020 Watermelon Variety Trial**  
**June – August**

Daily Agricultural Statistics for June, 2020

Day	Avg Temp (°F)	Max Temp (°F)	Min Temp (°F)	GDD (base 50 °F)	Avg RH (%)	Max RH (%)	Min RH (%)	Daily Solar (MJ.m <sup>-2</sup> .day <sup>-1</sup> )	Avg Wind Speed (mph)	Rainfall (in)	Ref ET (in.day <sup>-1</sup> )	Avg Soil Temp (°F)
1	61.6	71.1	48.2	9.6	48.5	85.8	29.2	30.8	5.4	0.00	0.21	68.8
2	66.0	75.2	54.6	14.9	65.4	90.6	35.7	18.4	5.5	0.00	0.17	67.6
3	80.7	90.3	70.7	30.5	58.3	77.0	39.4	22.4	8.9	0.00	0.28	70.0
4	80.9	93.2	68.2	30.7	64.3	92.1	38.0	25.9	3.9	0.00	0.24	73.2
5	79.1	87.8	71.0	29.4	70.5	87.4	48.7	25.6	8.1	0.00	0.25	74.6
6	80.3	90.0	72.7	31.3	70.5	93.7	44.6	26.7	5.4	0.00	0.25	75.8
7	73.4	80.1	61.9	21.0	52.0	87.7	31.4	31.7	6.1	0.00	0.26	74.9
8	68.9	80.4	54.5	17.5	55.6	90.5	30.0	31.5	3.4	0.00	0.23	73.2
9	74.7	89.6	54.7	22.2	61.8	94.8	31.3	30.7	3.7	0.00	0.25	74.1
10	80.5	91.6	72.3	31.9	74.4	94.3	49.7	25.4	8.1	0.00	0.26	76.6
11	76.2	82.6	70.4	26.5	84.0	98.5	71.6	8.1	8.1	1.48	0.10	75.4
12	75.7	85.3	67.2	26.2	65.6	99.0	29.9	30.4	3.2	0.01	0.24	76.7
13	69.3	78.2	59.5	18.8	59.8	92.2	38.7	31.2	4.2	0.00	0.23	76.0
14	64.2	72.4	55.6	14.0	72.2	96.4	47.1	30.8	3.7	0.00	0.20	74.5
15	64.1	71.3	58.5	14.9	72.4	92.5	52.3	22.3	6.4	0.00	0.17	72.6
16	64.4	71.4	60.4	15.9	73.2	87.6	50.7	20.9	7.2	0.00	0.17	71.6
17	63.4	66.1	60.4	13.2	95.3	99.0	84.5	4.7	5.6	0.25	0.05	69.7
18	71.4	81.9	64.9	23.4	82.1	100.0	50.4	27.0	3.5	0.02	0.21	72.6
19	72.8	83.7	61.8	22.8	77.6	98.7	49.6	20.4	3.2	0.00	0.17	73.9
20	73.9	84.3	65.1	24.7	80.9	98.4	50.0	21.9	3.4	0.00	0.18	74.6
21	71.9	83.4	66.4	24.9	89.3	99.3	57.2	16.6	1.7	0.70	0.14	75.3
22	75.5	87.6	66.0	26.8	82.8	100.0	55.3	26.7	3.0	0.01	0.21	77.3
23	79.5	91.0	68.0	29.5	76.2	99.1	49.1	29.4	5.0	0.00	0.25	79.2
24	78.5	84.2	68.2	26.2	60.2	92.5	26.9	30.3	6.8	0.01	0.28	79.1
25	73.5	80.1	67.9	24.0	81.6	96.3	61.4	8.4	2.1	0.05	0.09	76.3
26	75.9	86.3	62.7	24.5	66.9	98.6	34.9	28.9	4.5	0.00	0.24	76.7
27	80.3	90.4	71.9	31.2	67.8	88.6	44.4	25.7	6.1	0.00	0.25	78.1
28	80.7	89.8	72.3	31.0	71.8	94.9	45.5	26.1	3.3	0.00	0.23	80.2
29	79.8	89.1	70.6	29.9	68.6	98.6	40.0	29.3	4.3	0.00	0.25	80.6
30	77.2	88.8	67.8	28.3	70.1	94.5	36.5	23.9	3.3	0.00	0.21	80.4

Daily Agricultural Statistics for July, 2020

Day	Avg Temp (°F)	Max Temp (°F)	Min Temp (°F)	GDD (base 50 °F)	Avg RH (%)	Max RH (%)	Min RH (%)	Daily Solar (MJ.m <sup>-2</sup> .day <sup>-1</sup> )	Avg Wind Speed (mph)	Rainfall (in)	Ref ET (in.day <sup>-1</sup> )	Avg Soil Temp (°F)
1	73.5	80.0	68.8	24.4	86.6	98.3	66.1	15.1	2.4	0.24	0.13	78.8
2	77.6	88.5	65.4	26.9	73.4	99.8	44.2	29.1	3.1	0.00	0.23	79.4
3	83.0	94.9	70.9	32.9	63.1	92.5	33.2	28.6	2.9	0.00	0.26	81.5
4	78.0	86.6	70.5	28.5	77.5	96.1	51.3	23.4	3.3	0.00	0.20	81.7
5	79.1	90.9	66.8	28.8	72.5	99.7	42.7	27.6	3.8	0.00	0.24	82.2
6	79.6	91.5	68.8	30.1	73.6	97.8	42.0	25.4	5.5	0.86	0.24	82.3
7	75.8	83.9	69.0	26.5	88.4	98.2	68.1	16.9	4.1	0.88	0.15	79.7
8	78.7	87.0	71.6	29.3	82.4	100.0	52.8	28.3	2.9	0.00	0.23	81.7
9	78.8	85.7	72.6	29.2	85.0	100.0	63.6	26.7	3.1	0.00	0.21	82.6
10	76.5	82.6	72.4	27.5	88.9	98.6	68.6	15.2	9.9	3.08	0.15	79.1
11	80.5	88.2	74.6	31.4	81.0	98.1	58.1	23.3	5.0	0.00	0.21	80.6
12	79.2	89.3	68.0	28.7	72.6	98.0	38.7	29.8	2.9	0.00	0.24	81.8
13	77.9	86.3	71.0	28.6	79.0	98.3	49.8	23.7	2.2	0.00	0.19	81.8
14	77.9	86.3	70.0	28.1	70.1	97.9	39.2	27.7	3.1	0.00	0.23	81.7
15	75.1	86.6	64.5	25.5	79.9	98.4	46.0	23.6	2.6	0.00	0.19	80.6
16	73.7	80.4	67.8	24.1	84.5	99.0	65.7	24.1	3.3	0.00	0.18	80.0
17	79.1	88.9	68.1	28.5	84.7	98.8	65.4	22.2	4.7	0.00	0.19	80.7
18	82.5	93.6	74.9	34.3	80.1	99.2	43.0	26.0	1.5	0.00	0.22	83.6
19	81.7	92.8	72.8	32.8	85.3	100.0	56.7	23.7	2.6	0.00	0.21	84.2
20	86.7	95.4	79.0	37.2	69.9	95.0	45.7	27.6	3.8	0.00	0.26	85.3
21	84.5	94.6	75.1	34.9	72.0	97.6	43.8	28.4	2.5	0.00	0.25	85.9
22	80.2	92.2	73.2	32.7	82.3	98.3	56.2	23.5	4.0	0.01	0.21	85.7
23	81.5	91.9	72.0	32.0	77.9	97.7	52.4	25.1	3.9	0.00	0.22	85.1
24	78.2	85.3	74.3	29.8	87.5	98.1	67.4	15.2	2.2	0.02	0.13	83.9
25	78.5	88.8	70.7	29.7	86.5	100.0	60.4	25.3	2.3	0.00	0.20	83.9
26	82.8	94.1	73.6	33.9	74.7	100.0	39.0	26.5	3.4	0.00	0.24	84.5
27	83.5	93.6	73.8	33.7	67.6	99.1	39.3	27.4	4.0	0.00	0.25	84.4
28	84.4	94.2	74.6	34.4	71.9	97.3	43.0	27.1	5.0	0.07	0.26	85.2
29	82.1	91.9	74.1	33.0	72.6	99.8	40.6	26.9	2.9	0.01	0.23	85.3
30	81.7	92.3	71.1	31.7	79.1	100.0	44.5	23.7	3.3	0.06	0.21	84.3
31	74.5	77.9	72.8	25.3	94.5	99.8	84.0	8.3	2.0	0.55	0.07	81.7

Daily Agricultural Statistics for August, 2020

Day	Avg Temp (°F)	Max Temp (°F)	Min Temp (°F)	GDD (base 50 °F)	Avg RH (%)	Max RH (%)	Min RH (%)	Daily Solar (MJ.m <sup>-2</sup> .day <sup>-1</sup> )	Avg Wind Speed (mph)	Rainfall (in)	Ref ET (in.day <sup>-1</sup> )	Avg Soil Temp (°F)
1	78.5	87.5	71.7	29.6	83.8	99.9	55.0	24.2	2.3	0.00	0.20	82.5
2	82.4	90.9	74.7	32.8	82.4	99.3	59.4	22.0	5.7	0.00	0.20	83.2
3	79.9	89.3	75.0	32.2	83.3	96.2	59.9	19.4	3.5	0.08	0.18	83.5
4	77.6	83.9	71.4	27.6	85.2	98.4	62.9	15.7	8.1	0.71	0.16	80.7
5	78.7	88.1	71.7	29.9	77.9	99.6	49.6	24.7	2.1	0.00	0.20	81.8
6	74.1	81.2	70.4	25.8	91.8	100.0	70.3	15.2	2.4	0.05	0.12	81.1
7	76.2	85.5	70.8	28.1	87.0	100.0	62.4	17.2	2.3	0.03	0.14	81.0
8	75.1	85.8	69.6	27.7	87.6	99.9	63.2	15.2	1.6	0.14	0.13	80.9
9	76.9	88.5	66.2	27.3	83.6	100.0	53.5	24.3	2.0	0.00	0.19	81.6
10	79.3	90.2	71.1	30.7	84.2	99.8	52.4	24.6	2.6	0.00	0.20	82.8
11	80.1	88.7	72.6	30.6	84.8	100.0	56.3	21.7	3.9	0.00	0.19	83.0
12	77.8	91.2	72.4	31.8	89.9	100.0	53.7	16.6	2.3	0.24	0.15	82.9
13	75.9	83.0	72.4	27.7	96.6	100.0	81.6	8.9	2.2	0.85	0.08	80.7
14	75.8	82.9	69.2	26.0	91.1	100.0	71.1	16.2	4.7	0.80	0.14	79.9
15	72.6	77.1	67.7	22.4	88.3	99.6	71.7	9.5	3.6	0.00	0.09	77.8
16	70.8	73.6	68.3	20.9	96.1	100.0	89.1	8.4	7.2	0.48	0.07	76.2
17	72.3	82.1	63.9	23.0	85.4	100.0	58.3	22.9	2.5	0.14	0.17	77.4
18	73.8	84.6	65.0	24.8	81.3	100.0	50.1	25.3	2.4	0.00	0.19	78.4
19	70.9	80.9	65.6	23.2	91.4	100.0	65.2	12.7	1.2	0.68	0.10	77.1
20	71.3	80.3	63.1	21.7	84.0	100.0	56.5	23.4	2.1	0.01	0.16	77.0
21	72.3	83.0	60.8	21.9	86.0	100.0	56.8	21.5	2.1	0.00	0.16	77.4
22	74.3	82.4	70.4	26.4	91.7	100.0	64.1	13.0	1.7	0.08	0.11	78.3
23	77.7	87.7	69.0	28.3	86.8	100.0	58.9	21.0	2.0	0.00	0.17	79.7
24	80.3	88.5	74.1	31.3	85.5	99.9	61.9	21.3	4.6	0.00	0.18	81.2
25	80.4	88.5	73.2	30.9	79.1	99.7	55.1	23.5	5.6	0.00	0.20	81.2
26	75.4	82.8	66.1	24.5	73.7	99.0	48.5	24.9	3.9	0.00	0.19	79.8
27	81.9	91.6	71.4	31.5	74.4	96.0	49.8	21.3	5.9	0.00	0.21	80.0
28	80.9	90.8	73.5	32.1	75.7	99.5	56.3	0.0	4.5	0.23	0.07	81.3
29	76.6	84.2	71.6	27.9	94.8	100.0	78.3	9.6	5.4	1.19	0.09	79.5
30	72.5	79.4	63.3	21.3	72.9	99.7	47.9	24.3	4.0	0.00	0.18	78.0
31	69.5	80.2	59.3	19.8	81.1	100.0	50.3	15.6	1.8	0.00	0.12	76.0