



Seedless Watermelon Variety Trial Results 2021

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2021 University of Delaware Seedless Watermelon Variety Trial

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Introduction

The 2021 Seedless Watermelon Variety Trials included 30 standard varieties from 7 participating companies and 6 personal size varieties from 3 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 4 replications. Plots were 1 row, 30' in length.

Location and Soil Type

Dill farm, a part of the University of Delaware Thurman Adams Research Farm complex, Carvel Research and Education Center, Georgetown, Delaware. The soil type was an Ingleside Loamy Sand.

Cultural Practices

The field was fertilized and limed according to soil test results. Black plastic mulch and trickle irrigation were laid on 6.75' centers. Nitrogen fertilizer was applied preplant and additional nitrogen fertilizer was applied by fertigation during fruiting for a total of 120 lbs./a.

Trial entries are listed in Table 1. Entries were seeded in the greenhouse on April 17, 2021. Plants were transplanted to the field on May 18, 2021. Field plots were one row (6.75 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 9 plants per plot for standards and 2 ft with 14 plants for minis. 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 'Wayfarer', with the same pollenizers, in the same arrangement as the experimental plots.

Herbicides applied with a shielded sprayer to row middles were Gramoxone 2 qt/A, Reflex 12 oz/A, Dual 1.5 pt./A, and Prowl 2 pt./A. A comprehensive disease, insect and mite control program was used for the trial. Irrigation was applied regularly as determined by research farm staff. There were some water deficit periods lea

The summer growing season was hot with 20 days over 90 F. Rainfall for the growing season was 17.8 inches with 11.16 inches during July and August. Disease pressure was moderate with some gummy stem blight and *Phytophthora capsici* in low spots and yields were moderate.

Harvest

Fruits were harvested three times. The first harvest was on July 28, 71 days after transplanting (DAT), the second harvest was 84 DAT, the third harvest was 104 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 Tables 2 and 3 in both pounds per acre and fruit per acre for each variety. Yields in the trial ranged from 41,575 to 112,954 lbs./a in the standard trial and 36,659 to 69,516 lbs./a in the mini trial.

For the standard seedless group, the highest yielding varieties in the trial in terms of Marketable Yield in lbs./a were Red Amber, Tailgate, Fascination, Scarlet Crisp, E26C.00124, Crunchy Red, and El Capitan. This high yielding group ranged from 89,559 to 112,924 lbs. per acre.

The highest yielding varieties in terms of Marketable Yield in fruit/A for standard sized watermelons were El Capitan, Orchid Sweet, E26C.00124, ORS 6132C, Fascination, Crunchy Red, Scarlet Crisp, Captivation, Excursion, E26C.00139, and Red Amber. This high group ranged from 8,129 to 6,349 fruits per acre. Mini watermelons yield in melons per acre ranged from 10,983 to 7,260 fruits per acre.

Table 4 reports the percent of total harvest for each harvest. The following varieties produced more than 30% of their yield on the first harvest: Orchid Sweet, Dark Knight, WDL 8425, Prime Bottle Rocket, Tailgate, and Red Amber. Varieties that had extended harvest (30% or more harvested in the third harvest) were Shoreline, SVWA 6576, and Captivation.

Table 5 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 some small sized watermelons in the trial. In general, fruit weights were lighter in 2021 than in 2020. Medium-large fruited varieties averaging over 14 pounds included Sierra Nevada, Dark Knight, Tailgate, Crunchy Red, Joy Ride, Red Amber, Bottle Rocket, and Scarlet Crisp. Small-fruited varieties averaging under 13.0 pounds were: FWT 9161, Essence, E26C.00124, Powerhouse, E26C.00139, Prime, 3F 2186. Sweet Gem, Summerlicious, ORS 6132C, and Orchid Sweet.

Varieties that had greater than 50% of the melons harvested in the 45-count class were: Joy Ride, Scarlet Crisp, Tailgate, Shoreline, and Dark Knight. Varieties with 50% or greater percentage of small-fruited melons (60-count) included Summerlicious, E26C.00139, Prime, 3F 2186,

E26C.00124, Essence, ORS 6132C, SVWA 6576, Powerhouse, Sweet Gem, FWT 9161, Captivation, Excursion, WDL 8415, Fascination, WDL 9450, WDL 8425, and Kingman. Sierra Nevada was the only variety with significant amount of 30 and 36-count fruit (18.1%).

Table 6 gives size distributions for mini watermelons. ORS 70368 and ORS 70314 had significant numbers of watermelons outside of the personal size (>9 lbs. 15. 1 and 9.2 percent respectively. Petite Perfection and Nectaro had over 40% of the melons harvested in the 3-5 lb. range. All the mini watermelons tested had over 40% of harvested melons in the 5-7 lb. range.

Table 7 lists the varieties according to their soluble solid measurements. Soluble solids were higher in 2021 than in 2020. Soluble solids averages are based on a 20-fruit sample (5 fruit per replication). Those varieties with soluble solids 12.0 or greater were Joy Ride, SVWA 6576, Red Amber, Dark Knight, Prime, and Fascination. All other varieties had average soluble solids of over 10%.

Table 8 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 Fascination, FWT 9161, Joy Ride, Nectaro, ORS 6132C, ORS 70314, ORS 70368, ORS 7220, Petite Perfection, Sierra Nevada, and WDL 9454

The variety Scarlet Crisp had the highest incidence of hollow heart rated 3 to 5 (66%) followed by Prime (40 %). Orchid Sweet, WDL 8415, Sweet Gem, 3F 2186 and Kingman all had more than 25% severe hollow heart. Those additional varieties with one or more fruit with major or severe hollow heart (10% or more rating 3, 4 and 5) were Shoreline and Sirius

Table 9 lists the varieties according to the percent of fruit with enough hard seeds to render them unmarketable. ORS 70368, Sweet Gem, WDL 9454, Essence, ORS 7220, and Tailgate had significant numbers of fruit over standard for hard seed.

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Table 1. Entries in the 2021 University of Delaware Watermelon Variety Trial

	Variety	Entering Company
1	Enza Zaden	Red Amber
2	Enza Zaden	E26C.00124
3	Enza Zaden	E26C.00139
4	Hazera	Nectaro (mini)
5	HM Clause	Crunchy Red
6	Known You	Prime
7	Known You	Orchid Sweet (yellow)
8	Known You	3F-2186
9	Origene	Essence
10	Origene	ORS 6132C
11	Origene	ORS 7220 (mini)
12	Origene	ORS 70314 (mini)
13	Origene	ORS 70368 (mini)
14	Sakata	Kingman
15	Sakata	El Capitan
16	Sakata	Sierra Nevada
16	Sakata	FWT 9161
18	Seminis	Bottle Rocket
19	Seminis	Joy Ride
20	Seminis	Shoreline
21	Seminis	Tailgate
22	Seminis	SVWA 6576
23	Syngenta	Fascination
24	Syngenta	Captivation
25	Syngenta	Excursion
26	Syngenta	Summerlicious (WDL6421)
27	Syngenta	Powerhouse (WDL7401)
28	Syngenta	WDL8415
29	Syngenta	WDL9450
30	Syngenta	WDL9454
31	Syngenta	Sweet Gem
32	Syngenta	Dark Knight
33	Syngenta	Scarlet Crisp
34	Syngenta	WDL8425
35	Syngenta	Sirius (mini)
36	Syngenta	Petite Perfection (mini)

Table 2. 2021 Standard Size Seedless Watermelon Variety Trial: Varieties by Marketable Yield (all marketable fruit over 9 lbs¹) in Lbs./a, Fruits/a, and Fruits per Harvest

Variety	Yields and Harvest Distribution						
					Fruits per harvest		
	Marketable lbs./a		Marketable Fruits/a		Harvest 1 71 DAT	Harvest 2 84 DAT	Harvest 3 104 DAT
El Capitan	112954	a	8129	a	1924	4282	1924
Crunchy Red	100216	ab	6950	cba	1551	4282	1117
E26C.00124	96689	abc	7570	ba	1365	4902	1303
Scarlet Crisp	93686	abcd	6702	dcba	1365	4282	1055
Fascination	93140	abcde	7012	cba	1179	3847	1986
Tailgate	89593	abcdef	6143	fedcb	1862	2730	1551
Red Amber	89559	abcdef	6329	fedcba	1862	2730	1737
Captivation	86754	bcdefg	6577	edcba	993	3413	2172
Sierra Nevada	86102	bcdefg	5833	fedcb	1613	3351	869
Excursion	84621	bcdefg	6391	fedcba	1613	3351	1427
Dark Knight	84456	bcdefg	5771	fedcb	2048	2730	993
ORS 6132C	83459	bcdefg	7446	ba	745	4840	1862
Kingman	82175	bcdefg	6081	fedcb	1675	2854	1551
WDL 9450	82001	bcdefg	6019	fedcb	1613	3289	1117
WDL 8415	78474	bcdefg	5771	fedcb	1551	3227	993
Joy Ride	78059	bcdefg	5461	fedc	1117	2854	1489
E26C.00139	77810	bcdefg	6329	fedcba	1551	3475	1303
Powerhouse	77169	bcdefg	6081	fedcb	1365	3289	1427
Bottle Rocket	76147	bcdefg	5398	fedc	1737	2854	807
Orchid Sweet	71009	cdefg	8005	a	3103	3847	1055
Shoreline	68678	defg	5088	gfed	745	2606	1737
FWT 9161	67844	efg	5274	gfedc	869	3413	993
SVWA 6576	66252	fgh	5088	gfed	683	2668	1737
3F 2186	66168	fgh	5461	fedc	1179	3165	1117
Summerlicious	64751	fgh	5523	fedc	869	3661	993
WDL 9454	64429	fgh	4840	gfe	1303	2296	1241
WDL 8425	63969	fgh	4716	gf	1613	2420	683
Essence	61887	gh	4840	gfe	1241	2606	993
Prime	61714	gh	5026	gfed	1675	2048	1303
Sweet Gem	41575	h	3537	g	683	1924	931
<i>p-value</i>	<i>0.0007</i>		<i>0.0004</i>				
LSD_{0.05}	26210		1985				

Table 3. 2021 Personal Size (mini) Seedless Watermelon Variety Trial: Varieties by Marketable Yield (all marketable fruit over 3 lbs¹) in Lbs./a, Fruits/a, and Fruits per Harvest

Variety	Yields and Harvest Distribution				
			Fruits per harvest		
	Marketable lbs./a	Marketable Fruits/a	Harvest 1 71 DAT	Harvest 2 84 DAT	Harvest 3 104 DAT
ORS 70368	69516 a	9866 ab	1365	5957	2544
ORS 70314	65321 a	10797 a	3103	5461	2234
ORS 7220	61659 a	10735 a	2544	6143	2048
Nectaro	58656 a	10983 a	2482	6391	2110
Sirius	53985 ab	9308 ab	1489	5647	2172
Petite Perfection	36659 b	7260 b	2172	3537	1551
<i>p-value</i>	<i>0.019</i>	<i>0.05</i>			
LSD_{0.05}	21,990	3470			

Table 4. 2021 Seedless Watermelon Variety Trials: Percent of Total Harvested at Each Harvest by Number

Variety	Percent of Total Harvested at Each Harvest by Number			
	Harvest 1 71 DAT	Harvest 2 84 DAT	Harvest 3 104 DAT	
3F 2186	21.6	58.0	20.5	
Bottle Rocket	32.2	52.9	14.9	
Captivation	15.1	51.9	33.0	
Crunchy Red	22.3	61.6	16.1	
Dark Knight	35.5	47.3	17.2	
E26C.00124	18.0	64.8	17.2	
E26C.00139	24.5	54.9	20.6	
El Capitan	23.7	52.7	23.7	
Essence	25.6	53.8	20.5	
Excursion	25.2	52.4	22.3	
Fascination	16.8	54.9	28.3	
FWT 9161	16.5	64.7	18.8	
Joy Ride	20.5	52.3	27.3	
Kingman	27.6	46.9	25.5	
Orchid Sweet	38.8	48.1	13.2	
ORS 6132C	10.0	65.0	25.0	
Powerhouse	22.4	54.1	23.5	
Prime	33.3	40.7	25.9	
Red Amber	29.4	43.1	27.5	
Scarlet Crisp	20.4	63.9	15.7	
Shoreline	14.6	51.2	34.1	
Sierra Nevada	27.7	57.4	14.9	
Summerlicious	15.7	66.3	18.0	
SVWA 6576	13.4	52.4	34.1	
Sweet Gem	19.3	54.4	26.3	
Tailgate	30.3	44.4	25.3	
WDL 8415	26.9	55.9	17.2	
WDL 8425	34.2	51.3	14.5	
WDL 9450	26.8	54.6	18.6	
WDL 9454	26.9	47.4	25.6	
ORS 70368 (mini)	13.8	60.4	25.8	
ORS 70314 (mini)	28.7	50.6	20.7	
ORS 7220 (mini)	23.7	57.2	19.1	
Nectaro (mini)	22.6	58.2	19.2	
Sirius (mini)	16.0	60.7	23.3	
Petite Perfection (mini)	29.9	48.7	21.4	

Table 5. 2021 Standard 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.
Sierra Nevada	14.8	a	4.3	13.8	46.8	34.0	1.1
Dark Knight	14.6	ba	1.1	12.9	51.6	31.2	3.2
Tailgate	14.6	ba	1.0	9.1	53.5	35.4	1.0
Crunchy Red	14.4	cba	8.9	4.5	36.6	48.2	1.8
Joy Ride	14.3	dcba	0.0	8.0	54.5	37.5	0.0
Red Amber	14.2	edcba	1.0	9.8	46.1	43.1	0.0
Bottle Rocket	14.1	edcba	0.0	11.5	44.8	43.7	0.0
Scarlet Crisp	14.0	fedcb	0.9	2.8	53.7	41.7	0.9
El Capitan	13.9	gfedc	0.8	8.4	41.2	48.1	1.5
WDL 9450	13.6	hgfed	0.0	6.2	41.2	51.5	1.0
WDL 8415	13.6	hgfed	0.0	5.4	37.6	57.0	0.0
WDL 8425	13.6	ihgfe	0.0	5.3	43.4	51.3	0.0
Kingman	13.5	ihgfe	0.0	5.1	42.9	51.0	1.0
Shoreline	13.5	jihgfe	0.0	2.4	52.4	43.9	1.2
WDL 9454	13.3	kjihgf	0.0	5.1	44.9	47.4	2.6
Fascination	13.3	kjihg	0.0	0.9	44.2	54.0	0.9
Excursion	13.2	kjih	0.0	1.9	39.8	57.3	1.0
Captivation	13.2	kjih	0.0	1.9	38.7	59.4	0.0
SVWA 6576	13.0	lkjih	0.0	1.2	34.1	64.6	0.0
FWT 9161	12.9	mlkji	0.0	4.7	31.8	60.0	3.5
Essence	12.8	nmlkj	0.0	1.3	30.8	67.9	0.0
E26C.00124	12.8	nmlk	0.0	0.8	31.1	68.0	0.0
Powerhouse	12.7	nmlk	0.0	0.0	32.7	64.3	3.1
E26C.00139	12.3	onm	2.9	4.9	9.8	79.4	2.9
Prime	12.3	onml	0.0	1.2	22.2	72.8	3.7
3F 2186	12.1	on	0.0	2.3	21.6	69.3	6.8
Sweet Gem	11.8	po	0.0	1.8	21.1	63.2	14.0
Summerlicious	11.7	po	0.0	0.0	18.0	79.8	2.2
ORS 6132C	11.2	p	0.0	0.0	17.5	65.0	17.5
Orchid Sweet	8.9	q	0.0	0.0	3.1	47.3	49.6
<i>p-value</i>	<i><0.001</i>						
<i>LSD 0.05</i>	<i>0.8</i>						

Table 6. 2021 Personal Size (mini) 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				
		3-5 lbs.	5-7 lbs.	7-9 lbs.	>9 lbs.	
ORS 70368	7.0 a	10.7	41.5	32.7	15.1	
ORS 70314	6.0 b	30.5	44.3	16.1	9.2	
Sirius	5.8 b	30.0	48.7	16.7	4.7	
ORS 7220	5.8 b	28.3	52.0	16.8	2.9	
Nectaro	5.3 c	42.4	46.3	9.0	2.3	
Petite Perfection	5.0 c	46.2	46.2	7.7	0.0	
<i>p-value</i>	<i><0.001</i>					
<i>LSD 0.05</i>	<i>0.5</i>					

Table 7. 2021 Seedless Watermelon Variety Trial: Varieties by Soluble Solid Content

Variety	% Soluble Solids
Joy Ride	12.2
SVWA 6576	12.2
Red Amber	12.0
Dark Knight	12.0
Prime	12.0
Fascination	12.0
3F 2186	11.9
Essence	11.9
Bottle Rocket	11.8
FWT 9161	11.8
WDL 9450	11.7
Excursion	11.7
Sierra Nevada	11.6
Captivation	11.6
Orchid Sweet	11.6
Sweet Gem	11.6
E26C.00139	11.5
El Capitan	11.5
Powerhouse	11.5
E26C.00124	11.4
Tailgate	11.4
Kingman	11.4
WDL 9454	11.4
Crunchy Red	11.3
WDL 8415	11.3
Summerlicious	11.2
Petite Perfection	11.1
Nectaro	11.1
Shoreline	11.1
Sirius	11.1
ORS 6132C	10.9
ORS 70314	10.9
Scarlet Crisp	10.3
<i>p-value</i>	<i><0.001</i>
<i>LSD 0.05</i>	<i>0.8</i>

Table 8. 2021 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
Scarlet Crisp	2.9	a	0.0	26.7	26.7	13.3
Prime	2.7	a	40.0	0.0	33.3	6.7
Orchid Sweet	2.4	ab	20.0	0.0	13.3	20.0
WDL 8415	2.1	b	6.7	13.3	13.3	6.7
Sweet Gem	2.0	b	20.0	10.0	20.0	0.0
3F 2186	1.9	bc	6.7	20.0	6.7	6.7
Kingman	1.9	bc	26.7	13.3	13.3	0.0
Shoreline	1.4	cd	13.3	13.3	0.0	0.0
Dark Knight	1.3	d	13.3	0.0	6.7	0.0
Excursion	1.3	d	6.7	0.0	0.0	6.7
Sirius	1.3	d	6.7	13.3	0.0	0.0
Crunchy Red	1.3	d	26.7	0.0	0.0	0.0
E26C.00139	1.3	d	0.0	0.0	0.0	6.7
Essence	1.3	d	6.7	0.0	6.7	0.0
Summerlicious	1.2	d	0.0	0.0	6.7	0.0
Tailgate	1.2	d	20.0	0.0	0.0	0.0
WDL 8425	1.1	d	14.3	0.0	0.0	0.0
Bottle Rocket	1.1	d	0.0	6.7	0.0	0.0
Captivation	1.1	d	0.0	6.7	0.0	0.0
E26C.00124	1.1	d	13.3	0.0	0.0	0.0
Red Amber	1.1	d	13.3	0.0	0.0	0.0
WDL 9450	1.1	d	13.3	0.0	0.0	0.0
El Capitan	1.1	d	6.7	0.0	0.0	0.0
Powerhouse	1.1	d	6.7	0.0	0.0	0.0
SVWA 6576	1.1	d	6.7	0.0	0.0	0.0
Fascination	1.0	d	0.0	0.0	0.0	0.0
FWT 9161	1.0	d	0.0	0.0	0.0	0.0
Joy Ride	1.0	d	0.0	0.0	0.0	0.0
Nectaro	1.0	d	0.0	0.0	0.0	0.0
ORS 6132C	1.0	d	0.0	0.0	0.0	0.0
ORS 7220	1.0	d	0.0	0.0	0.0	0.0
ORS 70314	1.0	d	0.0	0.0	0.0	0.0
ORS 70368	1.0	d	0.0	0.0	0.0	0.0
Petite Perfection	1.0	d	0.0	0.0	0.0	0.0
Sierra Nevada	1.0	d	0.0	0.0	0.0	0.0
WDL 9454	1.0	d	0.0	0.0	0.0	0.0
<i>p-value</i>	<i>0.0001</i>					
<i>LSD 0.05</i>	<i>0.59</i>					







Table 9. 2021 Seedless Watermelon Variety Trial: Percent of Sampled Fruit Above Standard for Mature Seeds*






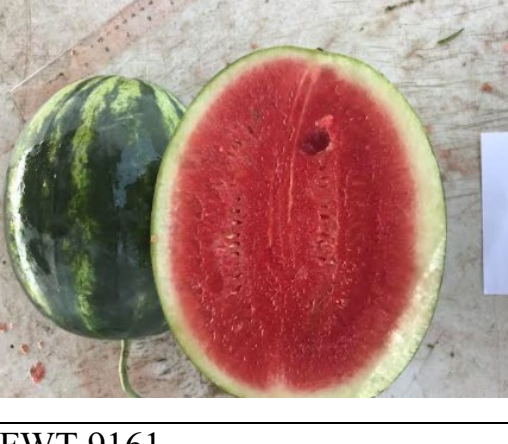
Variety	% Above Standard for Mature Seeds
ORS 70368	33.3
Sweet Gem	30.0
WDL 9454	21.4
Essence	13.3
ORS 7220	13.3
Tailgate	13.3
Nectaro	7.1
ORS 70314	7.1
Crunchy Red	6.7
Dark Knight	6.7
Orchid Sweet	6.7
ORS 6132C	6.7
Powerhouse	6.7
Red Amber	6.7
Sierra Nevada	6.7
Sirius	6.7
Summerlicious	6.7

* 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 2021 Seedless Watermelon Variety Trial

	
Fascination	El Capitan (company photo)
	
Captivation	Red Amber
	
Sierra Nevada	WDL 9450

 <p>DARK KNIGHT</p>	 <p>SCARLET CRISP</p>
<p>Dark Knight</p>	<p>Scarlet Crisp</p>
 <p>ORS 6132C</p>	 <p>E26C00124</p>
<p>ORS 6132C</p>	<p>E26C00124</p>
 <p>WDL 8425</p>	 <p>FWT 9161</p>
<p>WDL 8425</p>	<p>FWT 9161</p>



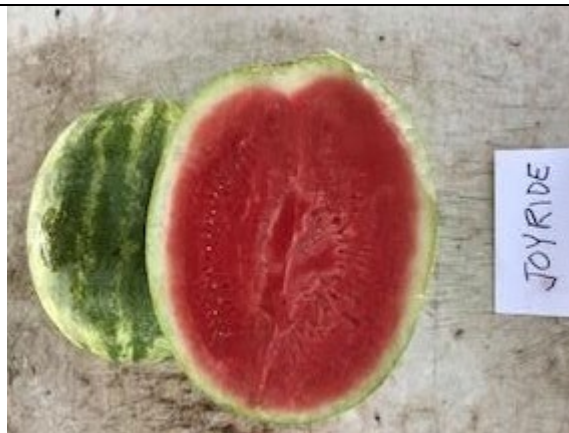
Excursion



Guardsman



Summerlicious









Joy Ride



Tailgate



Shoreline

	
Prime	Sirius
	
Orchid Sweet	ORS 7220 mini
	
Joy Ride	ORS70314 mini



Kingman



ORS70368 mini



Crunchy Red



3F-2186

APPENDIX B:

Weather Summary for the 2021 Watermelon Variety Trial

June – August

Daily Agricultural Statistics for June, 2021											
Day	Avg Temp (°F)	Max Temp (°F)	Min Temp (°F)	GDD (base 50 °F)	Avg RH (%)	Max RH (%)	Min RH (%)	Daily Solar (MJ.m ⁻² .day ⁻¹)	Avg Wind Speed (mph)	Rainfall (in)	Ref ET (in.day ⁻¹)
1	64.8	76.9	54.1	15.5	76.4	100.0	42.2	25.1	3.6	0.00	0.18
2	67.2	78.4	57.9	18.1	76.3	99.5	50.4	24.0	3.3	0.02	0.18
3	71.9	81.0	63.6	22.3	90.4	100.0	66.1	17.1	7.5	0.45	0.15
4	72.8	78.4	67.7	23.1	91.6	100.0	73.1	12.8	6.3	0.00	0.11
5	77.3	88.7	64.9	26.8	71.1	100.0	42.5	29.5	3.9	0.00	0.24
6	79.8	92.4	68.2	30.3	70.1	94.3	36.4	29.6	4.1	0.00	0.26
7	80.5	90.0	70.6	30.3	76.2	99.9	49.0	29.1	4.5	0.00	0.25
8	80.5	87.3	74.5	30.9	80.5	99.4	60.3	26.2	5.3	0.00	0.22
9	75.9	88.3	68.3	28.3	90.8	100.0	62.8	13.3	2.9	2.41	0.13
10	73.0	86.6	66.5	26.6	91.7	100.0	66.3	18.6	2.1	0.00	0.15
11	66.7	68.1	63.7	15.9	99.6	100.0	96.2	4.3	4.0	0.05	0.04
12	67.1	74.0	62.3	18.1	87.7	100.0	57.1	19.1	4.6	0.06	0.15
13	68.5	79.2	59.1	19.2	83.4	100.0	60.5	24.8	2.1	0.00	0.18
14	73.5	84.7	63.0	23.8	81.9	100.0	57.0	23.5	3.7	0.00	0.19
15	71.8	81.5	64.8	23.1	76.6	100.0	40.7	26.3	4.2	0.20	0.21
16	70.6	79.4	61.7	20.6	64.8	97.8	28.9	27.9	3.5	0.00	0.22
17	67.6	78.1	57.0	17.6	59.9	100.0	28.6	30.9	2.8	0.00	0.22
18	71.0	82.3	57.7	20.0	63.6	100.0	31.9	30.1	4.0	0.00	0.23
19	78.2	88.2	69.8	29.0	70.5	94.1	48.7	0.0	4.4	0.00	0.08
20	78.5	89.0	68.7	28.8	79.9	100.0	49.7	0.0	3.1	0.00	0.06
21	79.2	88.5	71.9	30.2	85.5	100.0	58.5	19.7	3.4	0.00	0.18
22	70.6	80.6	59.7	20.2	93.0	100.0	70.1	8.5	3.8	0.36	0.09
23	64.0	74.1	52.1	13.1	67.8	100.0	35.6	29.1	2.6	0.00	0.19
24	63.8	73.8	50.2	12.0	74.7	100.0	43.3	31.1	2.7	0.00	0.20
25	67.5	80.3	52.7	16.5	85.5	100.0	60.5	25.0	2.2	0.00	0.17
26	75.2	82.8	68.3	25.5	92.5	100.0	74.5	17.6	4.4	1.27	0.14
27	78.6	86.3	72.0	29.1	83.5	100.0	57.7	27.1	4.6	0.00	0.22
28	79.3	88.8	71.7	30.2	83.3	100.0	56.5	28.9	4.0	0.00	0.24
29	80.4	88.6	71.3	30.0	83.8	100.0	61.8	29.0	3.6	0.00	0.23
30	82.4	90.3	74.4	32.3	79.3	100.0	58.8	30.1	4.2	0.00	0.25

Daily Agricultural Statistics for July, 2021

Day	Avg Temp (°F)	Max Temp (°F)	Min Temp (°F)	GDD (base 50 °F)	Avg RH (%)	Max RH (%)	Min RH (%)	Daily Solar (MJ.m ⁻² .day ⁻¹)	Avg Wind Speed (mph)	Rainfall (in)	Ref ET (in.day ⁻¹)
1	78.6	90.2	71.6	30.9	86.8	100.0	59.6	22.8	2.8	0.15	0.20
2	71.6	76.3	65.9	21.1	95.1	100.0	80.4	10.5	1.8	1.11	0.09
3	67.3	78.6	59.8	19.2	83.1	100.0	52.1	23.2	3.7	0.11	0.18
4	71.4	82.7	61.1	21.9	79.9	100.0	46.5	26.8	1.6	0.01	0.19
5	75.2	86.2	62.7	24.5	76.5	100.0	47.3	28.2	2.0	0.00	0.21
6	79.2	88.8	69.4	29.1	81.1	100.0	56.1	27.6	3.3	0.00	0.22
7	81.8	90.3	75.1	32.7	77.0	92.2	54.2	27.5	3.5	0.00	0.24
8	77.8	86.0	72.9	29.5	89.0	100.0	66.1	15.5	4.2	1.07	0.14
9	78.1	86.2	71.1	28.7	86.4	100.0	64.1	25.5	5.0	1.91	0.20
10	75.5	82.5	69.4	25.9	79.2	100.0	52.3	28.3	3.3	0.00	0.22
11	77.5	86.7	65.9	26.3	85.9	100.0	68.4	26.1	3.0	0.00	0.20
12	81.7	90.1	73.3	31.7	85.0	100.0	63.3	24.8	3.5	0.00	0.21
13	82.9	91.2	75.7	33.5	82.0	99.3	56.8	24.0	3.0	0.00	0.21
14	82.2	90.8	73.8	32.3	79.6	100.0	54.2	22.8	2.3	0.04	0.20
15	79.4	89.2	69.7	29.4	85.0	100.0	61.2	25.9	1.5	0.01	0.20
16	82.6	92.1	73.8	32.9	80.1	100.0	50.2	24.8	1.9	0.00	0.21
17	82.1	91.4	71.8	31.6	82.7	100.0	55.0	26.2	3.6	0.37	0.23
18	76.9	84.2	68.5	26.3	80.9	100.0	55.9	25.2	4.5	0.05	0.20
19	74.6	83.2	67.2	25.2	78.6	99.6	52.4	20.0	1.5	0.00	0.16
20	77.4	89.1	65.3	27.2	79.3	100.0	46.4	27.1	0.9	0.00	0.19
21	77.3	89.2	69.8	29.5	82.8	100.0	47.7	22.0	2.5	0.00	0.19
22	71.9	80.6	63.4	22.0	73.8	98.9	43.6	25.0	4.0	0.00	0.20
23	71.6	82.7	61.1	21.9	71.2	100.0	32.7	33.3	1.9	0.00	0.19
24	72.0	84.3	58.3	21.3	73.0	100.0	40.5	30.8	1.9	0.00	0.17
25	76.6	83.7	70.0	26.8	81.9	97.8	71.3	20.6	4.8	0.00	0.17
26	81.7	90.0	75.2	32.6	82.2	97.3	57.6	19.5	2.3	0.00	0.17
27	80.9	91.9	72.6	32.2	80.1	100.0	42.7	25.1	1.8	0.00	0.21
28	77.7	87.6	70.1	28.9	81.4	100.0	49.1	24.5	2.5	0.08	0.20
29	76.3	85.1	68.5	26.8	90.6	100.0	67.9	13.5	2.2	0.05	0.12
30	79.5	88.5	67.3	27.9	76.2	100.0	44.1	21.0	3.4	0.00	0.19
31	70.1	79.6	64.7	22.2	67.8	99.4	46.7	16.1	2.0	0.00	0.13

Daily Agricultural Statistics for August, 2021

Day	Avg Temp (°F)	Max Temp (°F)	Min Temp (°F)	GDD (base 50 °F)	Avg RH (%)	Max RH (%)	Min RH (%)	Daily Solar (MJ.m ⁻² .day ⁻¹)	Avg Wind Speed (mph)	Rainfall (in)	Ref ET (in.day ⁻¹)
1	70.9	80.2	64.9	22.5	88.9	100.0	67.5	N/A	1.5	0.13	N/A
2	70.6	80.0	61.8	20.9	79.6	100.0	47.6	N/A	4.0	0.00	N/A
3	68.5	76.3	61.2	18.7	88.8	100.0	61.7	N/A	1.2	0.00	N/A
4	68.1	72.1	63.2	17.6	89.5	100.0	72.0	N/A	3.6	0.00	N/A
5	71.3	84.0	60.7	22.4	77.6	100.0	40.4	N/A	2.9	0.00	N/A
6	74.1	88.6	61.2	24.9	76.8	100.0	40.4	N/A	1.6	0.00	N/A
7	69.5	78.5	62.9	20.7	97.0	100.0	77.0	N/A	1.9	1.41	N/A
8	71.4	79.6	67.3	23.4	91.3	100.0	68.6	N/A	3.6	0.14	N/A
9	73.5	85.5	65.0	25.3	91.7	100.0	67.4	N/A	1.8	0.00	N/A
10	79.8	89.9	70.5	30.2	82.2	100.0	55.4	0.0	4.0	0.00	0.07
11	81.9	91.9	73.4	32.6	83.8	100.0	59.2	25.4	2.9	0.00	0.21
12	82.2	93.2	72.6	32.9	83.8	100.0	56.4	24.8	1.5	0.00	0.20
13	82.6	94.6	72.6	33.6	86.6	100.0	57.3	22.4	2.4	0.99	0.19
14	80.6	90.8	71.9	31.3	84.9	100.0	53.6	24.5	1.7	0.00	0.20
15	74.8	81.4	69.0	25.2	83.2	100.0	59.4	22.5	3.2	0.54	0.17
16	74.8	82.8	68.2	25.5	93.1	100.0	74.7	14.7	1.8	0.23	0.12
17	76.5	83.5	70.7	27.1	94.9	100.0	79.7	12.8	1.9	0.77	0.11
18	80.5	87.7	74.7	31.2	89.0	100.0	68.2	20.2	4.2	0.00	0.17
19	81.8	90.1	76.6	33.4	85.1	100.0	55.2	20.6	2.8	0.00	0.18
20	74.6	79.4	71.4	25.4	96.7	100.0	80.5	9.6	2.0	1.22	0.08
21	75.2	82.3	71.4	26.9	93.7	100.0	77.2	13.0	2.1	0.30	0.11
22	74.4	82.0	69.1	25.6	92.7	100.0	70.6	17.1	1.9	0.08	0.13
23	78.8	89.1	69.5	29.3	84.3	100.0	56.7	20.9	2.4	0.01	0.17
24	80.4	90.7	72.0	31.3	83.5	100.0	55.1	22.5	1.6	0.00	0.18
25	79.6	92.2	68.2	30.2	82.1	100.0	48.3	23.9	0.9	0.00	0.18
26	77.6	92.2	71.6	31.9	90.5	100.0	54.9	17.2	1.1	0.10	0.14
27	82.5	93.3	73.8	33.5	82.8	100.0	55.1	22.7	1.6	0.03	0.19
28	77.8	86.0	72.1	29.0	90.7	100.0	70.2	18.8	3.5	0.22	0.15
29	75.2	80.7	71.2	26.0	92.5	100.0	78.7	13.8	4.2	0.00	0.11
30	78.3	90.2	68.5	29.3	85.6	100.0	60.2	21.7	1.8	0.02	0.17
31	78.3	87.6	71.0	29.3	89.4	100.0	62.6	16.1	1.2	0.01	0.13

Monthly Agricultural Statistics