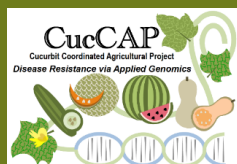


2022 Triploid Standard Watermelon Cultigen Evaluation Study



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Horticulture Series No. 241

NC STATE
EXTENSION



National Institute of Food and Agriculture
U.S. DEPARTMENT OF AGRICULTURE

2022 North Carolina
Triploid Standard Size Watermelon
Cultigen Evaluation Study
Hort. Series #241

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General Cultural Practices

These watermelon studies were grown on black plastic mulch and fertigated with drip tube. Pesticides used on all plots were chemicals labeled for that crop, (2022 North Carolina Agricultural Chemicals Manual, <https://content.ces.ncsu.edu/north-carolina-agricultural-chemicals-manual>).

Acknowledgements

We gratefully acknowledge the assistance of Hunter Barrier (Superintendent) and Wesley Hairre (Horticulture Supervisor), Horticultural Crops Research Station, Clinton, NC, as well as the personnel at the research station for their help in establishing, maintaining, and harvesting the cultigen evaluation studies. We want to acknowledge summer employees Andrew Pfefferkorn and Kaleb Holder, as well as graduate student Kim Heagy for their assistance with this study. The cooperation and support of BASF/Nunhems; Enza Zaden; HM Clause; Origene Seeds; Rijk Zwaan; Sakata Seed Company; Seedway; Seminis and Syngenta were also appreciated.

Disclaimer

This publication presents data from the triploid standard size watermelon cultigen evaluation study conducted during 2022. Information in this report is believed to be reliable but should not be relied upon as a sole source of information. Limited accompanying detail is included but excludes some pertinent information, which may aid interpretation.

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Watermelon Cultural Practices for 2022 Cultigen Studies, Horticultural Crops Research Station, Clinton, NC

Introduction

Growing conditions for the 2022 watermelon studies were favorable for the entire growing season. Temperatures were high and rainfall occurred in a timely manner and was never excessive during June through August (Figure 1). Rainfall was minimal during harvests 2 through 5 and watering was optimized through drip irrigation. Due to these favorable conditions, disease was not a factor and six harvests were made. The number of harvests in this study was comparable to the number of harvests and excellent markets that were experienced by commercial growers in North Carolina. North Carolina showed a small increase in watermelon production from 2020 to 2021. In 2020, acreage was reported at 9,000 acres. In 2021, acreage was reported at 9,300 acres. This translates to an economic value of \$36 million to North Carolina in 2021. North Carolina also saw a decrease in watermelon prices; \$14.10 per cwt in 2021 from \$15.80 per cwt in 2020 (USDA 2021 State Agriculture Overview, North Carolina).

Materials and Methods

Sowing and Field Preparations

Telone II (12 gal/ac) was applied to the entire study area on 4 March 2022 for weed and nematode control. K-Mag fertilizer (0-0-22-22-11Mg) at 150 lb/ac and NPK fertilizer (10-10-10-0) at 500 lb/ac were applied pre-plant on 29 March 2022.

Once all seeds were received from participating companies, they were planted into 72 cell Poly trays to grow transplants (Hummert Int.; Earth City, MO). Seeds of standard size cultigens were sown on 31 March 2022 (27 flats). Entry ‘Cracker Jack’ was received 13 days later than the other entries and was seeded 13 April 2022. The trays of sown seeds were placed in a germination room for 1-2 days. Temperature in the germination room was kept at 90-95 °F and humidity was kept between 85-90%. The planting medium used was a “fine germinating mix”, a commercial soilless mix (SunGro, Agawam, MA). Transplants were moved to a greenhouse for approximately three weeks, then moved to a “hardening” greenhouse for one week before being transplanted in the field.

Black polyethylene plastic (1.25 mil thick, high density plastic film, 60 inches wide; TriEast Ag Group, Inc., Clinton, NC) was laid on 22 April 2022. Command 3ME (0.5 pt/ac) and Curbit (4 pt/ac) were applied to row middles pre-plant on 3 May 2022.

Planting

Standard size triploid watermelon transplants were established in the field on 5 May 2022. Plots were 25 ft, 10 plants per plot, with 10 ft alleys between plots. Plots with missing plants were

replanted 1 week after planting to achieve 100% plant stand. ‘SP-7’ and ‘Wingman’ diploid pollinizer plants were used in the 2022 growing season to take advantage of the disease resistance and flowering habit of the complementary cultivars. Alternate plantings of ‘SP-7’ and ‘Wingman’ (4 plants/plot) were used as the pollinizer plants in each plot. ‘SP-7’ pollinizer plants were planted following triploid plants 1 and 7 while ‘Wingman’ pollinizer plants were planted after triploid plants 4 and 10 in each plot. Row middles were 10 ft and in-row spacing was 2.5 ft.

Fertilizer and Pest Management

A total of 50 lb/ac N, 50 lb/ac P, 83 lb K, 33 lb/ac S, and 16.5 lb/ac Mg were all applied broadcast (pre-plant) to the entire study area. Drip tape (NETAFIM, 12 in spacing, 0.24 gph; NETAFIM, Tel Aviv, Israel) was installed beneath the plastic mulch to fertigate the crop throughout the growing season. Liquid fertilizer with 4-0-8 analysis was initially applied through drip tape fertigation on 17 May 2022 and similarly on the following dates: 24 May 2022; 1, 6, 13, 21, 23, and 28 June 2022; 5, 11, and 21 July 2022. A total of 93 lb/ac N, 0 lb/ac P, and 186 lb/ac K were applied via fertigation throughout the growing season. Drip fertilizer application was calculated across the entire acreage being grown and not by bed covered with plastic mulch. Cumulative totals of applied fertilizer for the growing season were: 143 lb/ac N, 50 lb/ac P, 269 lb/ac K, 33 lb/ac S, and 16.5 lb Mg.

Fungicides were initially applied on 13 May 2022 and similarly on the following dates: 3, 10, and 22 June 2022; 1 and 19 July 2022. The following fungicides were applied and rotated to avoid potential development of resistance from diseases: Proline (5.7 fl oz/ac) was applied two times through the drip tube on 13 May 2022 and 6 June 2022; Copper (1 lb/ac), Quadris (15 fl oz/ac), Inspire (1 pt/ac), Manzate Pro Stick (3 lb/ac), Bravo (1 qt/ac), and Miravis Prime (11.4 fl oz/ac) were applied as foliar applications.

Insecticides were initially applied on 13 May 2022 and similarly on the following dates: 3, 10, 17, and 22 June 2022; 1 July 2022. Carbaryl (1 qt/ac) and Asana (8 fl oz/ac) were the primary insecticide products used, and were sprayed in rotation to avoid potential development of insecticide resistance. Admire Pro (10 fl oz/ac) was applied through the drip tube and a spray application, and Venom (6 oz/ac) was a spray application.

Miticide Banter (1 lb/ac) was applied on 3 June 2022. Applications of Gramaxone (1 qt/ac), Sandea (0.75 oz/ac), Clethodime Trizenta 2EC (8 fl oz/ac), and crop oil (1 qt/ac) were spot sprayed on weed escapes on 20 May and 30 June 2022.

Harvest and Yield Data Collection

Standard size triploid watermelon harvests took place on: 14 July (harvest 1), 20 or 21 July (harvest 2), 26 or 27 July (harvest 3), 4 or 5 August (harvest 4), 11 August (harvest 5), and 24 August (harvest 6). Fruits were placed in the following categories: < 9 lb, 9 – 13.4 lb, 13.5 – 17.4

lb, 17.5 – 21.4 lb, and ≥ 21.5 lb. Fruits were considered marketable if they weighed 9.0 lb or more. Fruits are often commercially marketed by number or count per bin with 9.0 – 13.5 fruit termed 60-count, 13.6 – 17.5 lb fruit termed 45-count, 17.6 – 21.4 lb fruit termed 36-count, and fruit 21.5 lb or larger termed 30-count. We used these weight designations to categorize the harvested fruits in this study. For the category measures, whether by cwt, number, or bin boxes, the 9 – 13.4 lb category included fruits that ranged from 9 – 13.44 lb; the 13.5 – 14.4 category included fruits that ranged from 13.45 – 17.44 lb; the 17.5 – 21.4 lb category included fruits that ranged from 17.45 – 21.44 lb. Fruits that weighed more than 21.45 lb were included in the 21.5 or larger category.

Quality Evaluations

Evaluations of each melon entry included yield (fruit weight/ac, number/ac, bins/ac) across various size categories and a number of quality measures. Soluble solids were measured by cutting a piece of fruit from the center of the fruit and squeezing out the fruit juice onto the digital refractometer (Atago, Vernon Hills, IL). Flesh firmness was taken using a Penetrometer FT 011 with a 7/16" plunger tip (QA Supplies LLC, Norfolk, VA) and was recorded in pounds. Samples were obtained by cutting the center of the fruit from the stem to blossom end. Pressure was then taken in five areas of the fruit: stem end, top side, ground spot side, blossom end, and center. The reported measures on flesh firmness are an average of the five sample areas and are an average value taken for 3 fruit per plot or 12 fruits per cultigen. Pressure was not taken on fruit with hollow heart. Hard seed in triploid fruit was determined according to USDA standards. To measure hard seed population and seed trace size, fruits were cut longitudinally, and then the halves were cut laterally. The number of hard seeds and seed trace size on the cut surface were counted and recorded. Most of the quality measurements were taken in the early harvests (1-2). Additional internal evaluations included hollow heart incidence and severity, flesh color, and rind thickness. Length and width measures were taken on 5 fruit per plot to determine the length-diameter ratio which provides information as to whether the fruit is round, short-elongated, or long-elongated.

Results

Overall fruit yield and quality were very good for the duration of the study. Average precipitation rates over the growing season granted excellent growing conditions with minimal disease pressure, allowing for 6 harvests. Rots/decay was a minor issue throughout all harvests. Bird pecks on fruits in the initial two harvests occurred in a few plots, mainly in one replication. Those fruits that could not be weighed were counted and weights assigned to them based on average fruit weights in the plots for a given cultigen. A representative photograph of each cultigen entry is shown for the standard size cultigens (Figure 2).

Yield (cwt/ac)

The highest yielding standard size triploid cultigens for marketable fruit in the early harvests (1-2) were ‘Powerhouse’ (528 cwt/ac), ‘ACX6177’ (500 cwt/ac), and ‘Virtue’ (498 cwt/ac) (Table 1). The average marketable yield for the early harvests (1-2) was 405 cwt/ac.

In the mid-season harvests (3-4), the highest yielding standard size triploid cultigen was ‘El Capitan’ (364 cwt/ac), followed by ‘Talca’ (362 cwt/ac) and ‘Warrior’ (357 cwt/ac) (Table 2). The average marketable yield for mid-season harvests (3-4) was 252 cwt/ac.

In the late season harvests (5-6), the highest yielding standard size triploid cultigen was ‘XWT9161’ (468 cwt/ac), followed by ‘Rio Grande’ (411 cwt/ac) and ‘ACX6177’ (405 cwt/ac) (Table 3). The average marketable yield for late harvests (5-6) was 297 cwt/ac.

Cumulative marketable yield across all six standard size triploid harvests were greatest for ‘ACX6177’ (1151 cwt/ac), followed by ‘XWT9161’ (1086 cwt/ac) and ‘El Capitan’ (1084 cwt/ac) (Table 4). The average marketable yield across all harvests was 955 cwt/ac. These yields are substantially higher than what might be achieved in a normal production season.

The standard size triploid cultigens with the highest percentage early harvest based on cwt were ‘HMX633800’ (51%), ‘Golden Crisp’ (50%), and ‘Virtue’ (48%). Those cultivars with the highest percentage late harvest based on cwt were ‘XWT9161’ (44%), ‘Lajoya’ (41%), and ‘Rio Grande’ (40%) (Table 5).

Fruit size (weight)

The standard size triploid cultigens with the highest average fruit weight in the early harvests (1-2) were ‘Sierra Nevada’ (23.5 lb/fruit), ‘Virtue’ (20.5 lb/fruit), and ‘Essence’ (20.1 lb/fruit) (Table 6). The average fruit weight for the early harvests (1-2) was 17.3 lb/fruit. Fruits were generally larger (about 2-3 lb greater per fruit) than might typically be anticipated.

In the mid-season harvests (3-4), the standard size triploid cultigens with the highest average fruit weight were ‘Sierra Nevada’ (21.2 lb/fruit), ‘Essence’ (20.6 lb/fruit), and ‘El Capitan’ (20.2 lb/fruit) (Table 7). The average fruit weight for the mid-season harvests (3-4) was 17.9 lb/fruit.

In the late season harvests (5-6), the standard size triploid cultigens with the highest average fruit weight were ‘Sierra Nevada’ (17.2 lb/fruit), ‘XWT9161’ (14.6 lb/fruit), and ‘ACX6177’ (14.4 lb/fruit) (Table 8). The average fruit weight for the late harvests (5-6) was 13.1 lb/fruit. A reduction in average fruit size is expected in later harvests.

Average fruit weight across all six standard size triploid harvests was greatest for ‘Sierra Nevada’ (20.1 lb/fruit), ‘El Capitan’ (17.9 lb/fruit), ‘Virtue’ (17.5 lb/fruit), and ‘Essence’ (17.5 lb/fruit) (Table 9). The cultigens with the lowest average fruit weight across all harvests were ‘Tropical Sunshine’ (11.3 lb/fruit), ‘Lajoya’ (12.9 lb/fruit), and ‘Captivation’ (13.4 lb/fruit). The average fruit weight for all cultigens across all six harvests was 15.8 lb/fruit. It is worth noting that ‘Sierra Nevada’ consistently produced the largest fruit in all harvests.

Fruit number per plant

The standard size triploid cultivars with the highest fruit number per plant in the early harvests (1-2) were 'ACX6177' (1.9 fruit/plant) and 'Embassy' (1.7 fruit/plant) (Table 10). The average fruit number per plant averaged for all cultivars for the early harvests (1-2) was 1.4 fruit/plant.

In the mid-season harvests (3-4), the standard size triploid cultivars with the highest fruit number per plant were 'Destination', 'El Capitan', 'Lajoya', 'Talca', and 'Warrior' (1.1 fruit/plant for all) (Table 11). The average fruit number per plant averaged for all cultivars for the mid-season harvests (3-4) was 0.8 fruit/plant.

In the late harvests (5-6), the standard size triploid cultivars with the highest fruit number per plant were 'Lajoya' (2.3 fruit/plant), 'Captivation' (1.9 fruit/plant), and 'XWT9196' (1.9 fruit/plant) (Table 12). The average fruit number per plant averaged for all cultivars for the late harvests (5-6) was 1.5 fruit/plant.

Fruit number per plant across all standard size triploid harvests were the greatest for 'Lajoya' (5.0 fruit/plant), 'ACX6177' (4.4 fruit/plant), and 'Captivation' (4.3 fruit/plant) (Table 13). The average fruit number per plant across all cultivars and all harvests was 3.7 fruit/plant.

Marketable number per acre

The standard size triploid cultivar with the highest total marketable fruit number per acre were 'Lajoya' (7449 fruit/ac), 'ACX6177' (7231 fruit/ac), and 'Embassy' (6447 fruit/ac) (Table 13). The standard size triploid cultivars with the lowest total marketable fruit number per acre were 'Golden Crisp' (4138 fruit/ac), 'HMC633800' (4356 fruit/ac), and 'Tropical Sunshine' (4574 fruit/ac). Average marketable fruit per acre was 89% across all entries for the season. The main reason fruit were not marketable was because of small fruit size (<9.0 lb). The number of bins in the 60-count (9.0 – 13.5 lb), 45-count (13.6 – 17.5 lb), 36-count (17.5 – 21.4 lb), and 30-count (≥ 21.5 lb) categories are provided for harvests 1-2, 3-4, 5-6, and cumulatively for harvests 1-6, respectively (Tables 6, 7, 8, 9).

Quality

Interior fruit quality measurements included: soluble solids, flesh color, seed trace size, hard seed population, length and diameter, rind thickness, flesh firmness, and hollow heart rating. The standard size triploid cultivars with the highest Brix readings were 'HMC633802 (Eleanor)' (12.4), 'HMC633800' (12.0), and 'Jet Ski' (11.7) (Table 14). The cultivar with the lowest Brix reading was 'Guardman' (10.3). The average Brix reading across all standard triploid cultivars was 11.0. The standard size triploid cultivars with the highest flesh firmness ratings were 'Golden Crisp' (4.6), 'WDL9432' (3.3), and 'Destination' (3.2). The standard size triploid cultivars with the lowest flesh firmness ratings were 'Tropical Sunshine' (2.1), 'Valor' (2.2), and 'Warrior' (2.2). The average flesh firmness rating across all standard size triploid cultivars was 2.6. There was a low incidence of hollow heart across all cultivars with 89.1% fruits with a HH0

rating (no crack in flesh). ‘Guardsman’ had the most severe incidence of hollow heart, with 25% of fruits with a HH3 rating (moderate cracking, unmarketable). ‘WDL9432’ had the most cases of hollow heart, with 35% of fruits with HH1 rating (hairline crack in flesh), 5% of fruits with a HH2 rating (obvious crack, but marketable), and 5% of fruits with a HH3 rating.

Summary

Overall, yields and fruit quality in this study were excellent. Good growing conditions and minimal pest pressure were important factors that contributed to these results. The results in this study are reflective of what generally occurred in the North Carolina commercial watermelon production acreage in 2022.

Financial Support

In addition to seed companies, this research was supported by the College of Life and Agricultural Sciences, North Carolina Agriculture Research, and the North Carolina Cooperative Extension Services. This work was in part supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, under award number 2020-51181-32139. CucCap (<https://cuccap.org/>).

Figure 1. Temperature and Precipitation for Clinton, NC Research Station, 2022.

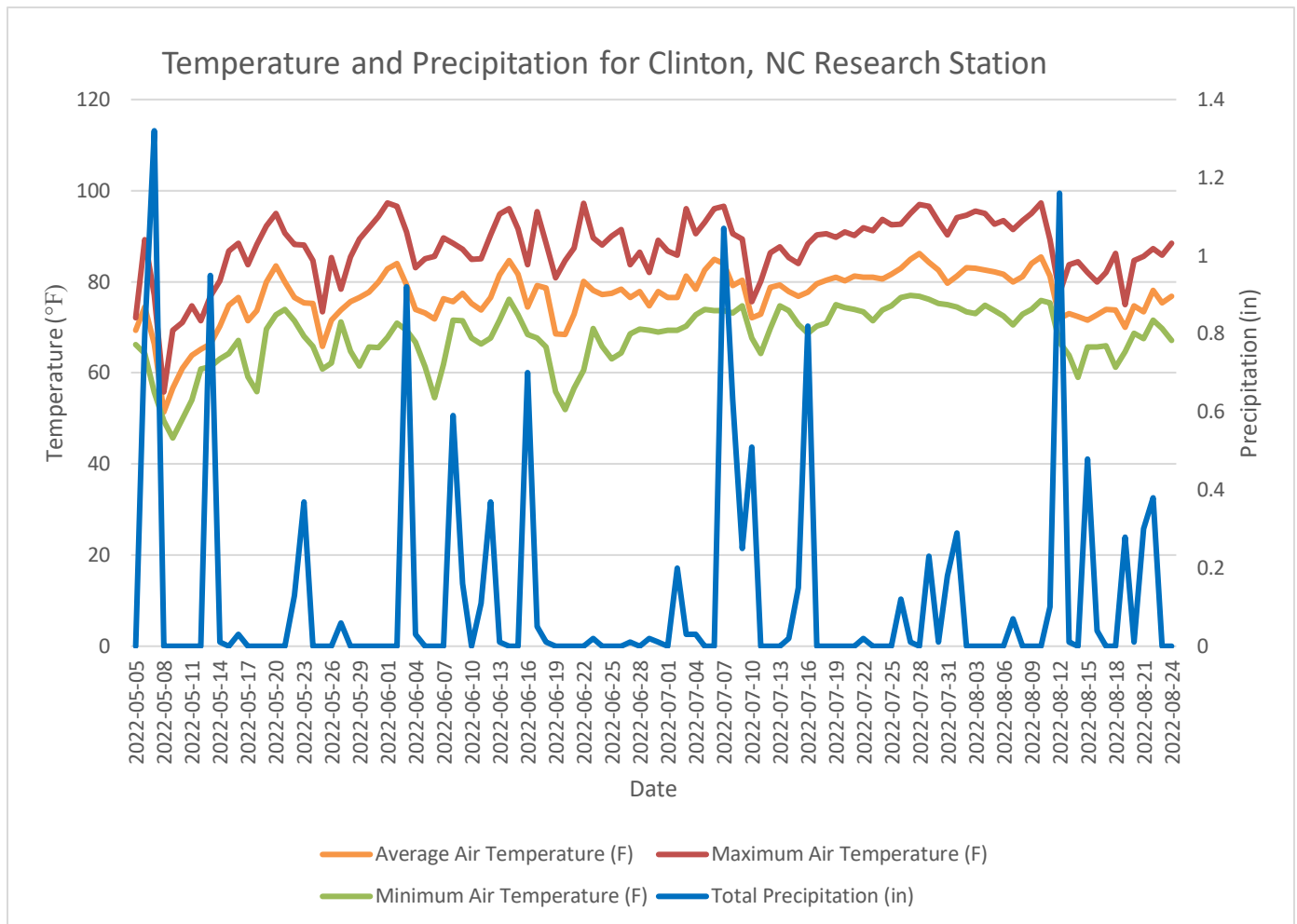


Figure 2. Standard size triploid watermelon photographs. Clinton, NC 2022.



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Figure 2. Standard size triploid watermelon photographs. Clinton, NC 2022.



Table 1. Standard size triploid watermelon cultigen study. Fruit weight (cwt) per acre by size category for early harvests (1-2), Clinton, NC, 2022.¹

<u>Cultigen</u>	<u>cwt (x100) per acre by size category²</u>					<u>Total cwt / ac³</u>	<u>Mkt. cwt / ac⁴</u>
	<u>< 9 lb⁵</u>	<u>9-13.4 lb</u>	<u>13.5-17.4 lb</u>	<u>17.5-21.4 lb</u>	<u>≥ 21.5 lb</u>		
ACX6177	8	81	210	126	83	508	500
Captivation	24	67	144	116	63	414	390
Cracker Jack	11	63	123	65	42	303	292
Destination	.	62	199	116	88	465	465
El Capitan	.	30	60	120	173	383	383
Embassy	12	83	227	66	82	470	457
Essence	4	10	74	110	223	420	417
Fascination	13	56	134	101	92	396	383
Golden Crisp	.	59	122	99	87	366	366
Guardsmen	16	36	70	186	132	438	423
HMC633800	7	28	106	117	167	426	419
HMC633802 (Eleanor)	13	66	60	170	63	372	359
Jet Ski	4	46	132	107	145	434	430
Lajoya	8	126	205	42	.	381	373
Powerhouse	4	46	97	162	222	531	528
Red Amber	.	40	139	139	129	447	447
Red Opal	2	42	126	94	113	378	376
Rio Grande	11	44	115	141	120	432	420
SVWA7826	8	47	82	152	82	371	363
Sierra Nevada	.	25	32	107	316	480	480
Talca	7	35	80	146	97	365	358
Tropical Sunshine	28	166	110	16	0	319	291
Valor	3	34	108	152	133	430	427
Virtue	2	25	60	141	271	500	498
WDL9432	12	57	103	49	74	295	283
Warrior	13	51	136	126	89	416	403
XWT9161	3	45	57	125	154	384	381
7197	8	68	139	111	120	445	438
Average	10	55	116	114	129	413	405
LSD (0.05)	37	99	165	164	199	175	185

¹ Yields were calculated using 100 percent seedless watermelon population. 'SP-7' pollenizers were interplanted after triploid plants 1 and 7 while 'Wingman' pollenizer plants were interplanted after triploid plants 4 and 10 (4 pollenizer plants per plot).

² Fruit cwt for each category are rounded to the nearest whole number.

³ Total weight included all fruit size categories.

⁴ Marketable weight included all fruit size categories except for fruits less than 9 lb.

⁵ "." indicates these cultigens were not included in the statistical analysis for the various size categories.

Table 2. Standard size triploid watermelon cultigen study. Fruit weight (cwt) per acre by size category for mid-season harvests (3-4), Clinton, NC, 2022.¹

Cultigen	cwt (x100) per acre by size category²					Total cwt / ac ³	Mkt. cwt / ac ⁴
	< 9 lb⁵	9-13.4 lb	13.5-17.4 lb	17.5-21.4 lb	≥ 21.5 lb		
ACX6177	7	44	40	73	89	254	246
Captivation	15	30	47	43	59	193	178
Cracker Jack	7	30	61	67	118	283	276
Destination	10	33	40	108	153	344	334
El Capitan	.	19	96	85	164	367	364
Embassy	12	25	86	82	53	259	246
Essence	13	20	33	43	252	360	348
Fascination	7	29	42	50	109	237	230
Golden Crisp	7	16	28	75	99	226	219
Guardsman	4	23	13	33	151	224	220
HMC633800	11	31	26	77	73	218	207
HMC633802 (Eleanor)	5	47	38	67	84	242	236
Jet Ski	6	14	89	52	63	225	219
Lajoya	14	66	106	72	21	279	265
Powerhouse	10	9	48	34	78	180	169
Red Amber	.	23	72	58	120	273	273
Red Opal	3	41	57	60	168	329	326
Rio Grande	2	11	42	76	92	224	222
SVWA7826	13	28	41	60	122	264	250
Sierra Nevada	.	30	20	35	138	223	223
Talca	.	50	26	103	183	366	362
Tropical Sunshine	17	70	85	33	.	205	188
Valor	7	74	26	34	82	223	216
Virtue	8	20	20	69	98	216	207
WDL9432	9	34	65	48	33	189	180
Warrior	8	20	92	110	135	365	357
XWT9161	.	37	21	66	113	237	237
7197	3	25	28	84	124	264	260
Average	9	32	50	64	110	260	252
LSD (0.05)	30	77	107	130	186	292	289

¹ Yields were calculated using 100 percent seedless watermelon population. 'SP-7' pollenizers were interplanted after triploid plants 1 and 7 while 'Wingman' pollenizer plants were interplanted after triploid plants 4 and 10 (4 pollenizer plants per plot).

² Fruit cwt for each category are rounded to the nearest whole number.

³ Total weight included all fruit size categories.

⁴ Marketable weight included all fruit size categories except for fruits less than 9 lb.

⁵ "." indicates these cultigens were not included in the statistical analysis for the various size categories.

Table 3. Standard size triploid watermelon cultigen study. Fruit weight (cwt) per acre by size category for late harvests (5-6), Clinton, NC, 2022.¹

Cultigen	cwt (x100) per acre by size category²					Total cwt / ac³	Mkt. cwt / ac⁴
	< 9 lb	9-13.4 lb	13.5-17.4 lb	17.5-21.4 lb	≥ 21.5 lb⁵		
ACX6177	17	118	180	65	42	422	405
Captivation	66	183	51	42	51	393	327
Cracker Jack	15	123	73	50	57	318	302
Destination	48	65	80	52	34	279	230
El Capitan	11	124	84	58	70	347	337
Embassy	37	164	95	15	0	311	274
Essence	26	107	99	65	31	327	302
Fascination	21	120	94	42	12	289	268
Golden Crisp	17	63	35	8	24	146	129
Guardsman	32	110	74	66	13	297	264
HMC633800	35	39	67	26	22	190	155
HMC633802 (Eleanor)	35	106	71	34	0	246	211
Jet Ski	15	130	112	8	19	284	269
Lajoya	64	212	133	33	21	463	399
Powerhouse	37	151	106	68	54	416	379
Red Amber	31	131	108	76	42	389	358
Red Opal	45	138	85	60	32	360	315
Rio Grande	20	114	153	83	61	431	411
SVWA7826	25	128	101	35	22	311	286
Sierra Nevada	33	54	85	57	138	368	335
Talca	23	131	67	58	33	312	288
Tropical Sunshine	84	67	41	16	.	207	124
Valor	55	150	66	25	30	326	271
Virtue	26	104	111	58	32	331	305
WDL9432	21	137	82	24	19	282	261
Warrior	20	160	60	34	22	297	277
XWT9161	27	145	124	104	94	495	468
7197	31	123	102	87	54	398	367
Average	33	121	91	48	41	330	297
LSD (0.05)	56	135	152	121	104	244	249

¹ Yields were calculated using 100 percent seedless watermelon population. 'SP-7' pollenizers were interplanted after triploid plants 1 and 7 while 'Wingman' pollenizer plants were interplanted after triploid plants 4 and 10 (4 pollenizer plants per plot).

² Fruit cwt for each category are rounded to the nearest whole number.

³ Total weight included all fruit size categories.

⁴ Marketable weight included all fruit size categories except for fruits less than 9 lb.

⁵ "." indicates these cultigens were not included in the statistical analysis for the various size categories.

Table 4. Standard size triploid watermelon cultigen study. Fruit weight (cwt) per acre by size category for cumulative harvests (1-6), Clinton, NC, 2022.¹

Cultigen	Company	Rank	cwt (x100) per acre by size category ²					Total cwt / ac ³	Mkt. cwt / ac ⁴
			< 9 lb	9-13.4 lb	13.5-17.4 lb	17.5-21.4 lb	≥ 21.5 lb ⁵		
ACX6177	BASF/Nunhems	1	32	243	431	264	213	1184	1151
Captivation	Syngenta	21	105	279	242	201	172	1000	894
Cracker Jack	Enza Zaden	23	33	216	256	181	217	904	871
Destination	Enza Zaden	12	59	160	318	276	275	1088	1029
El Capitan	Sakata	3	15	174	240	262	407	1098	1084
Embassy	BASF/Nunhems	16	62	272	408	163	135	1039	978
Essence	Origene	6	42	137	206	217	506	1108	1066
Fascination	Syngenta	22	42	205	270	194	213	923	881
Golden Crisp	Syngenta	27	23	137	184	183	210	738	714
Guardman	Seedway	19	52	169	158	285	296	960	907
HMC633800	HM Clause	25	54	98	200	220	262	834	781
HMC633802 (Eleanor)	HM Clause	24	53	219	169	270	148	860	806
Jet Ski	Seminis	17	25	190	333	166	228	943	918
Lajoya	Origene	10	86	405	444	147	42	1123	1037
Powerhouse	Syngenta	5	51	207	252	264	354	1128	1076
Red Amber	Enza Zaden	4	31	193	319	274	291	1109	1078
Red Opal	Seedway	13	49	221	269	214	313	1067	1018
Rio Grande	Enza Zaden	8	34	169	311	301	273	1087	1053
SVWA7826	Seminis	20	47	202	224	247	227	946	899
Sierra Nevada	Sakata	9	33	109	137	199	593	1071	1038
Talca	Origene	15	34	215	174	307	312	1043	1008
Tropical Sunshine	Rijk Zwaan	28	129	302	236	65	.	731	603
Valor	Syngenta	18	65	258	199	211	245	978	913
Virtue	Syngenta	14	37	150	191	268	401	1047	1010
WDL9432	Syngenta	26	42	228	249	121	127	767	725
Warrior	BASF/Nunhems	11	41	231	289	270	247	1078	1037
XWT9161	Sakata	2	30	227	202	296	362	1116	1086
7197	BASF/Nunhems	7	42	217	268	282	298	1106	1064
Average			48	208	256	227	273	1003	955
LSD (0.05)			72	185	273	252	291	394	412

¹ Yields were calculated using 100 percent seedless watermelon population. 'SP-7' pollenizers were interplanted after triploid plants 1 and 7 while 'Wild Card Plus' pollenizer plants were interplanted after triploid plants 4 and 10 (4 pollenizer plants per plot).

² Fruit cwt for each category are rounded to the nearest whole number.

³ Total weight included all fruit size categories.

⁴ Marketable weight included all fruit size categories except for fruits less than 9 lb.

⁵ "." indicates these cultigens were not included in the statistical analysis for the various size categories.

Table 5. Standard size triploid watermelon study. Percentage of fruits harvested early, mid, and late season¹. Clinton, NC 2022.

Cultigen	Percentage² (%) of total fruits harvested by weight (cwt)		
	Early harvest (1-2)	Mid-season harvest (3-4)	Late harvest (5-6)
ACX6177	43	22	36
Captivation	41	19	39
Cracker Jack	34	31	35
Destination	43	32	26
El Capitan	35	33	32
Embassy	45	25	30
Essence	38	33	30
Fascination	43	26	31
Golden Crisp	50	31	20
Guardman	46	23	31
HMC633800	51	26	23
HMC633802 (Eleanor)	43	28	29
Jet Ski	46	24	30
Lajoya	34	25	41
Powerhouse	47	16	37
Red Amber	40	25	25
Red Opal	35	31	34
Rio Grande	40	21	40
SVWA7826	39	28	33
Sierra Nevada	45	21	34
Talca	35	35	30
Tropical Sunshine	44	28	28
Valor	44	23	33
Virtue	48	21	32
WDL9432	39	25	37
Warrior	39	34	28
XWT9161	34	21	44
7197	40	24	36
Average	42	26	32

¹ Early harvests were 14, 20, and 21 July (Harvests 1 and 2), mid-season harvests were 26, 27 July and 4, 5 August (Harvests 3 and 4), late harvests were 11 and 24 August (Harvests 5 and 6).

² Percentages are rounded to the nearest whole number.

Table 6. Standard size triploid watermelon cultigen study. Bin boxes per acre and percentage distribution by size category and average weight (lb) per fruit for early harvests (1-2), Clinton, NC, 2022.¹

Cultigen	Bin boxes per acre by size category ²					Mkt Bins/ ac	% Total Yield by Count				Avg lb/fruit
	< 9 lb ³	9-13.4 lb	13.5-17.4 lb	17.5-21.4 lb	≥ 21.5 lb		30	36	45	60	
ACX6177	1	12	30	18	12	71	16	27	40	15	16.2
Captivation	3	10	21	17	9	56	15	27	35	17	15.2
Cracker Jack	2	9	18	9	6	42	12	21	42	21	15.4
Destination	.	9	28	17	13	66	18	25	43	14	16.4
El Capitan	.	4	9	17	25	55	43	33	16	8	19.9
Embassy	2	12	32	9	12	65	17	14	48	18	15.6
Essence	1	1	11	16	32	60	53	26	17	3	20.1
Fascination	2	8	19	14	13	55	24	27	32	14	16.0
Golden Crisp	.	8	17	14	12	52	23	25	35	17	17.2
Guardman	2	5	10	27	19	60	27	41	17	10	17.1
HMC633800	1	4	15	17	24	60	38	29	25	7	18.4
HMC633802 (Eleanor)	2	9	9	24	9	51	17	46	16	17	16.5
Jet Ski	1	7	19	15	21	61	33	25	30	12	17.4
Lajoya	1	18	29	6	.	53	.	11	52	35	13.9
Powerhouse	1	7	14	23	32	75	42	31	18	9	19.1
Red Amber	.	6	20	20	18	64	28	31	32	10	17.7
Red Opal	0	6	18	13	16	54	28	25	34	13	17.4
Rio Grande	2	6	16	20	17	60	28	32	26	11	17.2
SVWA7826	1	7	12	22	12	52	21	40	23	14	17.0
Sierra Nevada	.	4	5	15	45	69	66	22	7	5	23.5
Talca	1	5	11	21	14	51	25	40	23	10	17.8
Tropical Sunshine	4	24	16	2	0	42	0	4	36	51	12.1
Valor	0	5	15	22	19	61	31	35	25	8	18.0
Virtue	0	4	9	20	39	71	51	31	13	5	20.5
WDL9432	2	8	15	7	11	40	22	16	35	22	15.6
Warrior	2	7	19	18	13	58	21	31	33	12	16.6
XWT9161	0	6	8	18	22	54	40	32	15	12	19.0
7197	1	10	20	16	17	63	28	25	30	15	17.0
Average	1	8	17	16	18	58	28	28	29	14	17.3
LSD (0.05)	5	14	24	23	28	26	--	--	--	--	5.5

¹ Yields were calculated using 100 percent seedless watermelon population. 'SP-7' pollenizers were interplanted after triploid plants 1 and 7 while 'Wingman' pollenizer plants were interplanted after triploid plants 4 and 10 (4 pollenizer plants per plot).

² Bin boxes for each category are rounded to the nearest whole number.

³ "." indicates these cultigens were not included in the statistical analysis for the various size categories.

Table 7. Standard size triploid watermelon cultigen study. Bin boxes per acre and percentage distribution by size category and average weight (lb) per fruit for mid-season harvests (3-4), Clinton, NC, 2022.¹

Cultigen	Bin boxes per acre by size category ²					Mkt Bins/ ac	% Total Yield by Count				Avg lb/fruit
	< 9 lb ³	9-13.4 lb	13.5-17.4 lb	17.5-21.4 lb	≥ 21.5 lb		30	36	45	60	
ACX6177	1	6	6	10	13	35	27	23	13	36	15.5
Captivation	2	4	7	6	8	25	31	24	19	19	15.5
Cracker Jack	1	4	9	10	17	39	43	22	22	10	17.7
Destination	1	5	6	15	22	48	45	31	12	10	18.8
El Capitan	.	3	14	12	23	52	45	24	23	6	20.2
Embassy	2	4	12	12	8	35	19	30	29	13	15.3
Essence	2	3	5	6	36	50	71	12	6	8	20.6
Fascination	1	4	6	7	16	33	44	26	17	11	19.0
Golden Crisp	1	2	4	11	14	31	44	34	12	7	19.2
Guardsmen	1	3	2	5	22	31	68	11	5	12	19.4
HMC633800	2	4	4	11	10	30	32	32	13	15	16.9
HMC633802 (Eleanor)	1	7	5	10	12	34	35	27	17	19	17.2
Jet Ski	1	2	13	7	9	31	34	20	37	7	17.0
Lajoya	2	9	15	10	3	38	6	25	39	25	14.0
Powerhouse	1	1	7	5	11	24	44	17	26	4	17.8
Red Amber	.	3	10	8	17	39	41	26	25	8	18.9
Red Opal	0	6	8	9	24	47	51	16	19	13	18.8
Rio Grande	0	2	6	11	13	32	32	38	24	5	19.4
SVWA7826	2	4	6	9	17	36	42	27	18	9	18.4
Sierra Nevada	.	4	3	5	20	32	60	14	8	18	21.2
Talca	.	7	4	15	26	52	48	27	8	17	19.5
Tropical Sunshine	2	10	12	5	.	27	.	16	39	33	12.7
Valor	1	11	4	5	12	31	35	14	13	35	16.2
Virtue	1	3	3	10	14	30	49	28	10	8	19.8
WDL9432	1	5	9	7	5	26	10	22	43	21	14.5
Warrior	1	3	13	16	19	51	34	29	27	8	18.3
XWT9161	.	5	3	9	16	34	45	28	10	18	19.2
7197	0	4	4	12	18	37	46	31	12	9	19.5
Average	1	5	7	9	16	36	40	24	19	14	17.9
LSD (0.05)	4	11	15	19	27	41	--	--	--	--	7.3

¹ Yields were calculated using 100 percent seedless watermelon population. 'SP-7' pollenizers were interplanted after triploid plants 1 and 7 while 'Wingman' pollenizer plants were interplanted after triploid plants 4 and 10 (4 pollenizer plants per plot).

² Bin boxes for each category are rounded to the nearest whole number.

³ "." indicates the cultigen was not included in the statistical analysis for the various size categories.

Table 8. Standard size triploid watermelon cultigen study. Bin boxes per acre and percentage distribution by size category and average weight (lb) per fruit for late harvests (5-6), Clinton, NC, 2022.¹

Cultigen	Bin boxes per acre by size category ²					Mkt Bins/ ac	% Total Yield by Count				Avg lb/fruit
	< 9 lb	9-13.4 lb	13.5-17.4 lb	17.5-21.4 lb	≥ 21.5 lb ³		30	36	45	60	
ACX6177	2	17	26	9	6	58	10	16	42	29	14.4
Captivation	9	26	7	6	7	47	13	10	14	47	11.8
Cracker Jack	2	18	10	7	8	43	15	14	20	46	13.8
Destination	7	9	11	7	5	33	9	20	27	24	12.9
El Capitan	2	18	12	8	10	48	19	18	25	34	14.5
Embassy	5	23	14	2	0	39	0	4	30	53	11.6
Essence	4	15	14	9	4	43	11	20	26	34	13.4
Fascination	3	17	13	6	2	38	3	14	32	42	12.8
Golden Crisp	2	9	5	1	3	18	12	4	21	45	12.5
Guardsmen	5	16	11	9	2	38	5	21	25	39	13.6
HMC633800	5	6	10	4	3	22	8	11	26	31	11.8
HMC633802 (Eleanor)	5	15	10	5	0	30	0	14	28	44	12.2
Jet Ski	2	19	16	1	3	38	6	2	40	47	12.5
Lajoya	9	30	19	5	3	57	4	7	26	48	11.6
Powerhouse	5	22	15	10	8	54	11	14	29	37	13.3
Red Amber	4	19	15	11	6	51	11	20	28	33	14.0
Red Opal	6	20	12	9	5	45	7	13	23	43	12.5
Rio Grande	3	16	22	12	9	59	14	19	34	27	14.3
SVWA7826	4	18	14	5	3	41	7	11	31	43	12.8
Sierra Nevada	5	8	12	8	20	48	42	18	18	13	17.2
Talca	3	19	10	8	5	41	7	19	22	43	13.0
Tropical Sunshine	12	10	6	2	.	18	.	9	19	32	9.6
Valor	8	21	9	4	4	39	9	7	20	46	11.6
Virtue	4	15	16	8	5	44	9	15	35	31	13.6
WDL9432	3	20	12	3	3	37	7	10	29	48	13.2
Warrior	3	23	9	5	3	40	8	10	21	54	12.6
XWT9161	4	21	18	15	13	67	19	22	25	28	14.6
7197	4	18	15	12	8	52	13	22	25	32	14.1
Average	5	17	13	7	6	42	11	14	26	38	13.1
LSD (0.05)	8	19	22	17	15	36	--	--	--	--	4.9

¹ Yields were calculated using 100 percent seedless watermelon population. 'SP-7' pollenizers were interplanted after triploid plants 1 and 7 while 'Wingman' pollenizer plants were interplanted after triploid plants 4 and 10 (4 pollenizer plants per plot).

² Bin boxes for each category are rounded to the nearest whole number.

³ "." indicates the cultigen was not included in the statistical analysis for the various size categories.

Table 9. Standard size triploid watermelon cultigen study. **Bin boxes** per acre and **percentage distribution** by size category and **average fruit weight (lb)** per fruit for **cumulative harvests (1-6)**, Clinton, NC, 2022.¹

Cultigen	<u>Bin boxes per acre by size category²</u>					Mkt Bins/ ac	<u>% Total Yield by Count</u>				Avg lb/fruit
	< 9 lb	9-13.4 lb	13.5-17.4 lb	17.5-21.4 lb	≥ 21.5 lb ³		30	36	45	60	
ACX6177	5	35	62	38	30	164	18	22	37	21	15.4
Captivation	15	40	35	29	25	128	16	19	24	30	13.4
Cracker Jack	5	31	37	26	31	124	24	19	28	25	15.4
Destination	8	23	45	39	39	147	25	25	29	15	16.0
El Capitan	2	25	34	37	58	155	37	24	22	16	17.9
Embassy	9	39	58	23	19	140	13	15	39	27	14.3
Essence	6	20	29	31	72	152	46	20	17	13	17.5
Fascination	6	29	39	28	30	126	23	21	29	22	15.4
Golden Crisp	3	20	26	26	30	102	28	24	26	19	16.6
Guardsmen	7	24	23	41	42	130	30	30	17	18	16.3
HMC633800	8	14	29	31	37	112	32	27	23	12	16.5
HMC633802 (Eleanor)	8	31	24	39	21	115	17	31	20	25	15.0
Jet Ski	4	27	48	24	33	131	24	17	35	20	15.5
Lajoya	12	58	63	21	6	148	3	13	39	37	12.9
Powerhouse	7	30	36	38	51	154	32	23	23	18	16.4
Red Amber	4	28	46	39	42	154	25	25	29	18	16.3
Red Opal	7	32	38	31	45	145	29	18	25	23	15.7
Rio Grande	5	24	44	43	39	150	25	27	29	16	16.3
SVWA7826	7	29	32	35	32	128	23	26	24	22	15.6
Sierra Nevada	5	16	20	28	85	148	56	18	12	11	20.1
Talca	5	31	25	44	45	144	31	30	16	20	16.8
Tropical Sunshine	18	43	34	9	.	86	.	8	32	41	11.3
Valor	9	37	28	30	35	130	24	21	21	26	14.8
Virtue	5	21	27	38	57	144	39	25	18	14	17.5
WDL9432	6	33	36	17	18	104	15	15	33	31	14.3
Warrior	6	33	41	39	35	148	23	25	27	22	15.7
XWT9161	4	32	29	42	52	155	32	27	18	20	16.8
7197	6	31	38	40	43	152	27	26	24	20	16.2
Average	7	30	37	32	39	136	27	22	26	21	15.8
LSD (0.05)	10	26	39	36	42	59	--	--	--	--	3.7

¹ Yields were calculated using 100 percent seedless watermelon population. 'SP-7' pollenizers were interplanted after triploid plants 1 and 7 while 'Wingman' pollenizer plants were interplanted after triploid plants 4 and 10 (4 pollenizer plants per plot).

² Bin boxes for each category are rounded to the nearest whole number.

³ "." indicates the cultigen was not included in the statistical analysis for the various size categories.

Table 10. Standard size triploid watermelon cultigen study. Fruit number per acre by size category and fruit number per plant for early harvests (1-2), Clinton, NC, 2022.¹

<u>Cultigen</u>	<u>Fruit number (no.) per acre by size category²</u>					<u>Total no. / ac</u>	<u>Mkt. no. / ac</u>	<u>Frt no. / plant</u>
	<u>< 9 lb³</u>	<u>9-13.4 lb</u>	<u>13.5-17.4 lb</u>	<u>17.5-21.4 lb</u>	<u>≥ 21.5 lb</u>			
ACX6177	131	697	1394	653	348	3223	3093	1.9
Captivation	479	566	915	610	261	2831	2352	1.6
Cracker Jack	131	523	784	348	174	1960	1830	1.1
Destination	.	523	1307	610	392	2831	2831	1.6
El Capitan	.	261	392	610	653	1917	1917	1.1
Embassy	174	697	1437	348	348	3006	2831	1.7
Essence	87	87	479	566	871	2091	2004	1.2
Fascination	218	479	871	523	392	2483	2265	1.4
Golden Crisp	.	479	784	523	348	2134	2134	1.2
Guardman	305	305	479	958	523	2570	2265	1.5
HMC633800	131	261	653	610	697	2352	2222	1.4
HMC633802 (Eleanor)	174	566	392	871	261	2265	2091	1.3
Jet Ski	44	392	871	566	610	2483	2439	1.4
Lajoya	131	1045	1350	218	.	2744	2614	1.6
Powerhouse	44	392	610	828	915	2788	2744	1.6
Red Amber	.	348	915	741	523	2526	2526	1.5
Red Opal	44	348	828	479	479	2178	2134	1.3
Rio Grande	218	348	741	741	479	2526	2309	1.5
SVWA7826	131	392	523	784	348	2178	2047	1.3
Sierra Nevada	.	218	218	566	1045	2047	2047	1.2
Talca	87	305	523	741	392	2047	1960	1.2
Tropical Sunshine	392	1437	741	87	0	2657	2265	1.5
Valor	44	305	697	784	566	2396	2352	1.4
Virtue	44	218	392	741	1045	2439	2396	1.4
WDL9432	174	479	653	261	305	1873	1699	1.1
Warrior	174	436	871	653	392	2526	2352	1.5
XWT9161	44	392	348	653	610	2047	2004	1.2
7197	131	566	915	566	479	2657	2526	1.5
Average	153	467	753	594	499	2421	2295	1.4
LSD (0.05)	678	847	1080	858	804	1129	1068	0.6

¹ Yields were calculated using 100 percent seedless watermelon population. 'SP-7' pollenizers were interplanted after triploid plants 1 and 7 while 'Wingman' pollenizer plants were interplanted after triploid plants 4 and 10 (4 pollenizer plants per plot).

² Fruit numbers for each category are rounded to the nearest whole number.

³ "." indicates the cultigen was not included in the statistical analysis for the various size categories.

Table 11. Standard size triploid watermelon cultigen study. Fruit number per acre by size category and fruit number per plant for mid-season harvests (3-4), Clinton, NC, 2022.¹

Cultigen	Fruit number (no.) per acre by size category²					Total no. / ac	Mkt. no. / ac	Frt no. / plant
	< 9 lb³	9-13.4 lb	13.5-17.4 lb	17.5-21.4 lb	≥ 21.5 lb			
ACX6177	131	392	261	392	348	1525	1394	0.9
Captivation	261	261	305	218	218	1263	1002	0.7
Cracker Jack	87	261	392	348	523	1612	1525	0.9
Destination	131	261	261	566	610	1830	1699	1.1
El Capitan	.	174	610	436	566	1830	1786	1.1
Embassy	174	218	566	436	218	1612	1437	0.9
Essence	174	174	218	218	1002	1786	1612	1.0
Fascination	87	261	261	261	392	1263	1176	0.7
Golden Crisp	87	131	174	392	392	1176	1089	0.7
Guardsmen	87	218	87	174	566	1133	1045	0.7
HMC633800	131	261	174	392	305	1263	1133	0.7
HMC633802 (Eleanor)	87	392	261	348	348	1437	1350	0.8
Jet Ski	87	131	610	261	261	1350	1263	0.8
Lajoya	218	566	697	392	87	1960	1742	1.1
Powerhouse	131	87	305	174	305	1002	871	0.6
Red Amber	.	174	479	305	479	1437	1437	0.8
Red Opal	44	348	392	305	653	1742	1699	1.0
Rio Grande	44	87	261	392	348	1133	1089	0.7
SVWA7826	174	261	261	305	479	1481	1307	0.9
Sierra Nevada	.	261	131	174	479	1045	1045	0.6
Talca	.	436	174	523	697	1873	1830	1.1
Tropical Sunshine	261	610	566	174	.	1612	1350	0.9
Valor	87	653	174	174	305	1394	1307	0.8
Virtue	131	174	131	348	348	1133	1002	0.7
WDL9432	131	305	436	261	131	1263	1133	0.7
Warrior	131	174	566	566	523	1960	1830	1.1
XWT9161	.	305	131	348	436	1220	1220	0.7
7197	44	218	174	436	479	1350	1307	0.8
Average	127	278	324	333	426	1453	1346	0.8
LSD (0.05)	438	661	700	681	712	1556	1497	0.9

¹ Yields were calculated using 100 percent seedless watermelon population. 'SP-7' pollenizers were interplanted after triploid plants 1 and 7 while 'Wingman' pollenizer plants were interplanted after triploid plants 4 and 10 (4 pollenizer plants per plot).

² Fruit numbers for each category are rounded to the nearest whole number.

³ "." indicates the cultigen was not included in the statistical analysis for the various size categories.

Table 12. Standard size triploid watermelon cultigen study. Fruit number per acre by size category and fruit number per plant for late harvests (5-6), Clinton, NC, 2022.¹

Cultigen	Fruit number (no.) per acre by size category ²					Total no. / ac	Mkt. no. / ac	Frt no. / plant
	< 9 lb	9-13.4 lb	13.5-17.4 lb	17.5-21.4 lb	≥ 21.5 lb ³			
ACX6177	218	1045	1176	348	174	2962	2744	1.7
Captivation	915	1655	348	218	218	3354	2439	1.9
Cracker Jack	218	1089	479	261	218	2265	2047	1.3
Destination	653	566	523	261	131	2134	1481	1.2
El Capitan	131	1089	566	305	305	2396	2265	1.4
Embassy	479	1481	610	87	0	2657	2178	1.5
Essence	348	958	653	348	131	2439	2091	1.4
Fascination	305	1089	610	218	44	2265	1960	1.3
Golden Crisp	218	566	218	44	87	1133	915	0.7
Guardsman	436	958	479	348	44	2265	1830	1.3
HMC633800	523	348	436	131	87	1525	1002	0.9
HMC633802 (Eleanor)	479	915	479	174	0	2047	1568	1.2
Jet Ski	218	1176	741	44	87	2265	2047	1.3
Lajoya	871	1960	871	174	87	3964	3093	2.3
Powerhouse	479	1350	697	348	218	3093	2614	1.8
Red Amber	436	1133	697	392	174	2831	2396	1.6
Red Opal	653	1176	566	305	131	2831	2178	1.6
Rio Grande	305	1002	1002	436	261	3006	2701	1.7
SVWA7826	348	1176	653	174	87	2439	2091	1.4
Sierra Nevada	436	479	566	305	523	2309	1873	1.3
Talca	305	1176	436	305	131	2352	2047	1.4
Tropical Sunshine	1220	610	261	87	.	2178	958	1.3
Valor	784	1350	436	131	131	2831	2047	1.6
Virtue	348	915	741	305	131	2439	2091	1.4
WDL9432	261	1176	523	131	87	2178	1917	1.3
Warrior	261	1437	392	174	87	2352	2091	1.4
XWT9161	348	1307	828	523	392	3398	3049	1.9
7197	392	1089	653	479	218	2831	2439	1.6
Average	450	1081	594	252	155	2526	2077	1.5
LSD (0.05)	737	1193	1001	633	428	1657	1588	1.0

¹ Yields were calculated using 100 percent seedless watermelon population. 'SP-7' pollenizers were interplanted after triploid plants 1 and 7 while 'Wingman' pollenizer plants were interplanted after triploid plants 4 and 10 (4 pollenizer plants per plot).

² Fruit numbers for each category are rounded to the nearest whole number.

³ "." indicates the cultigen was not included in the statistical analysis for the various size categories.

Table 13. Standard size triploid watermelon cultigen study. Fruit number per acre by size category and fruit number per plant for cumulative harvests (1-6), Clinton, NC, 2022.¹

Cultigen	Fruit number (no.) per acre by size category ²					Total no. / ac	Mkt. no. / ac	Frt no. / plant
	< 9 lb	9-13.4 lb	13.5-17.4 lb	17.5-21.4 lb	≥ 21.5 lb ³			
ACX6177	479	2134	2831	1394	871	7710	7231	4.4
Captivation	1655	2483	1568	1045	697	7449	5793	4.3
Cracker Jack	436	1873	1655	958	915	5837	5401	3.4
Destination	784	1350	2091	1437	1133	6795	6011	3.9
El Capitan	174	1525	1568	1350	1525	6142	5968	3.5
Embassy	828	2396	2614	871	566	7275	6447	4.2
Essence	610	1220	1350	1133	2004	6316	5706	3.6
Fascination	610	1830	1742	1002	828	6011	5401	3.5
Golden Crisp	305	1176	1176	958	828	4443	4138	2.6
Guardsman	828	1481	1045	1481	1133	5968	5140	3.4
HMC633800	784	871	1263	1133	1089	5140	4356	3.0
HMC633802 (Eleanor)	741	1873	1133	1394	610	5750	5009	3.3
Jet Ski	348	1699	2222	871	958	6098	5750	3.5
Lajoya	1220	3572	2919	784	174	8668	7449	5.0
Powerhouse	653	1830	1612	1350	1437	6882	6229	4.0
Red Amber	436	1655	2091	1437	1176	6795	6360	3.9
Red Opal	741	1873	1786	1089	1263	6752	6011	3.9
Rio Grande	566	1437	2004	1568	1089	6665	6098	3.8
SVWA7826	653	1830	1437	1263	915	6098	5445	3.5
Sierra Nevada	436	958	915	1045	2047	5401	4966	3.1
Talca	436	1917	1133	1568	1220	6273	5837	3.6
Tropical Sunshine	1873	2657	1568	348	.	6447	4574	3.7
Valor	915	2309	1307	1089	1002	6621	5706	3.8
Virtue	523	1307	1263	1394	1525	6011	5489	3.5
WDL9432	566	1960	1612	653	523	5314	4748	3.1
Warrior	566	2047	1830	1394	1002	6839	6273	3.9
XWT9161	392	2004	1307	1525	1437	6665	6273	3.8
7197	566	1873	1742	1481	1176	6839	6273	3.9
Average	683	1826	1671	1179	1079	6400	5717	3.7
LSD (0.05)	1020	1593	1786	1324	1145	2283	2324	1.3

¹ Yields were calculated using 100 percent seedless watermelon population. 'SP-7' pollenizers were interplanted after triploid plants 1 and 7 while 'Wingman' pollenizer plants were interplanted after triploid plants 4 and 10 (4 pollenizer plants per plot).

² Fruit numbers for each category are rounded to the nearest whole number.

³ "." indicates the cultigen was not included in the statistical analysis for the various size categories.

Table 14. Standard size triploid watermelon cultigen study. Interior fruit quality, Clinton, NC, 2022. ¹

Cultigen	Flesh Firmness	Flesh Color ²	Hard Seed Pop ³	Seed Trace Size ⁴	LD ⁵	Rind ⁶	Soluble Solids ⁷	Hollow Heart	Hollow Heart Ratings ⁸				
									HH0	HH1	HH2	HH3	HH4
ACX6177	2.5	3.8	0.7	0.9	1.1	17.6	11.0	0.1	95.0	0.0	5.0	0.0	0.0
Captivation	2.7	3.8	0.7	1.4	1.2	14.9	10.9	.	100.0	0.0	0.0	0.0	0.0
Cracker Jack	2.3	4.3	0.0	1.9	1.2	15.7	11.3	0.1	95.0	5.0	0.0	0.0	0.0
Destination	3.2	3.8	0.4	1.1	1.3	14.5	10.5	0.1	95.0	5.0	0.0	0.0	0.0
El Capitan	2.6	4.0	0.3	1.1	1.2	15.9	10.4	0.2	90.0	5.0	5.0	0.0	0.0
Embassy	2.3	4.1	0.2	1.1	1.2	15.7	11.6	0.3	90.0	0.0	5.0	5.0	0.0
Essence	2.6	5.0	0.3	2.9	1.1	17.9	11.3	0.1	95.0	5.0	0.0	0.0	0.0
Fascination	2.3	4.3	1.8	1.1	1.2	14.3	11.0	0.3	85.0	5.0	5.0	5.0	0.0
Golden Crisp	4.6	yellow	0.4	2.0	1.3	11.7	10.7	0.1	95.0	5.0	0.0	0.0	0.0
Guardsmen	2.3	4.1	0.8	1.2	1.3	13.9	10.3	0.9	70.0	0.0	5.0	25.0	0.0
HMC633800	2.5	4.3	0.6	1.0	1.3	15.6	12.0	0.2	90.0	5.0	0.0	5.0	0.0
HMC633802 (Eleanor)	2.4	4.5	0.6	0.8	1.2	16.1	12.4	.	100.0	0.0	0.0	0.0	0.0
Jet Ski	2.7	4.3	0.1	0.8	1.3	13.4	11.7	0.1	95.0	5.0	0.0	0.0	0.0
Lajoya	3.1	4.6	0.3	1.8	1.0	16.3	11.4	.	100.0	0.0	0.0	0.0	0.0
Powerhouse	2.3	3.8	0.2	1.0	1.1	15.9	11.0	.	100.0	0.0	0.0	0.0	0.0
Red Amber	2.5	4.1	0.3	1.8	1.2	16.9	11.0	0.1	90.0	10.0	0.0	0.0	0.0
Red Opal	2.4	3.9	0.3	1.9	1.2	14.3	11.0	0.4	75.0	15.0	10.0	0.0	0.0
Rio Grande	2.4	4.4	1.3	1.3	1.1	15.0	10.9	0.1	95.0	0.0	5.0	0.0	0.0
SVWA7826	3.0	4.0	0.4	1.4	1.2	15.1	11.3	0.2	80.0	20.0	0.0	0.0	0.0
Sierra Nevada	2.8	4.0	0.1	1.1	1.2	15.6	10.9	0.3	85.0	5.0	10.0	0.0	0.0
Talca	2.4	4.4	0.5	1.4	1.2	16.8	10.5	.	100.0	0.0	0.0	0.0	0.0
Tropical Sunshine	2.1	yellow	1.6	2.5	1.0	12.3	10.5	.	100.0	0.0	0.0	0.0	0.0
Valor	2.2	4.7	0.2	1.3	1.2	12.3	11.0	0.4	75.0	15.0	5.0	5.0	0.0
Virtue	2.6	4.6	0.3	1.4	1.2	14.2	10.7	0.5	70.0	12.5	17.5	0.0	0.0
WDL9432	3.3	5.0	0.0	1.2	1.2	16.2	10.5	0.6	55.0	35.0	5.0	5.0	0.0
Warrior	2.2	4.0	0.5	2.0	1.2	15.6	10.9	0.2	90.0	0.0	10.0	0.0	0.0
XWT9161	2.9	4.0	0.1	0.9	1.2	14.4	10.8	.	100.0	0.0	0.0	0.0	0.0
7197	2.4	4.1	0.1	1.6	1.2	16.5	11.2	0.2	85.0	15.0	0.0	0.0	0.0
Average	2.6	4.2	0.5	1.4	1.2	15.1	11.0	0.2	89.1	6.0	3.1	1.8	0.0
LSD (0.05)	0.8	0.7	1.1	1.0	0.1	4.3	1.4	1.1	--	--	--	--	--

¹ Most measurements were taken from fruits in harvests 1 and 2.

² Rating: 1=white, 2=pink, 3=red, 4=medium-dark red, 5=blood red

³ Average number of hard seeds counted within 3 melons per replication (12 per entry).

⁴ Rating: 1=small (i.e. tomato), 3=medium, 5=large.

⁵ LD= length and diameter ratio, average of 5 melons per replication (20 per entry).

⁶ Rind=rind thickness (mm), measured from rind to where white and colored flesh meet.

⁷ Indicates sweetness, average of 3 melons per replication (12 per entry).

⁸ HH Rating Scale

HH0: No crack in flesh

HH1: Hairline crack in flesh

HH2: obvious crack, marketable

HH3: moderate cracking, unmarketable

HH4: complete separation in flesh to rind, unmarketable