

2002 University of Delaware Seedless Watermelon Variety Trial Results

Tracy Wootten and Ed Kee
University of Delaware
Research and Education Center
16684 County Seat Highway
Georgetown, DE 19947

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2002 University of Delaware Seedless Watermelon Variety Trial

Tracy Wootten, Ed Kee, and James Adkins, University of Delaware Research & Education Center, 16684 County Seat Highway, Georgetown, Delaware 19947
Phone: 302-856-7303, Fax: 302-856-1845
E-mail: wootten@udel.edu, kee@udel.edu, adkins@udel.edu

The 2002 Seedless Watermelon Variety Trial was planted at the University of Delaware Research & Education Center. The objective: to evaluate seedless watermelon varieties under Delaware growing conditions. The parameters for evaluation included yield, quality and maturity.

The trial was located in field 12 on the University of Delaware Research & Education Center farm. The field was worked October 17, 2001 and rye was planted for rye strips. To encourage good growth of the rye, 30% UAN at 14.5 gal./A was applied February 22, 2002. Roundup Ultra was applied on April 5, 2002 to kill the rye in the beds. The beds were worked on April 17, 2002, leaving rye standing in the drive rows for windbreaks. On May 7, 30% UAN at 15 gal./A, Diazinon AG500 at 0.75 gal./A (for seed corn maggot control), and Roundup Ultra Max at 1.5 qts./A was applied. Black plastic mulch with trickle irrigation was laid on 8' centers in the beds on May 16, 2003. Sinbar at 3 oz./A was applied on May 18, 2002 for weed control. The nozzles were plugged to prevent direct spray on the plastic. We received 0.47 inches of rainfall that evening.

The trial had 41 entries this year. Plants were seeded in the greenhouse on April 17, 2002 and transplanted to the field on May 23, 2002. The plots were one-row plots, replicated three times using a randomized complete block design. Seven plants per variety were planted using a 3' in-row spacing. 'Jamboree' was used as the pollinator variety. On June 23, 2002, Capture at 6.4 oz./A and on July 4, 2002, Agrimek at 8 oz./A was applied for mite control. The remainder of the nitrogen was applied through the drip system on June 10, July 1, and July 18 at the rate of 30 lbs of N per application. Chlorothalonil and Quadris were alternated for disease control throughout the season with applications made on 6/2/02, 6/21/02, 7/3/02, 7/17/00, 7/31/02, 8/14/02.

The seedless watermelons were harvested as they would be harvested commercially on 7/31/02, 8/9/02 and 8/21/02. Each watermelon was weighed individually. A total of eighteen melons per entry were cut at harvest with the following measurements taken: soluble solids determined using a hand-held refractometer, percentage hollow heart, largest width of the hollow heart opening, and rind thickness measured 2 inches from the blossom end of the melon. Readings were taken during the first two harvests.

The growing season started very cool and windy. Transplants were held back from planting in the field approximately one week due to extremely low temperatures in May (see appendix). The remainder of the season was hot and dry. Media used during transplant production was defective with poor mixing of the wetting agent in the media. This resulted in poor and uneven germination for all varieties. Therefore, germination rates have been removed from the 2002 results. There were healthy plants for each variety. The 21 best plants were selected and set in the field May 23. There were 3 varieties that had healthy plants for two replications and are listed as observational varieties in the results.

Results:

Yield information can be found on Tables 1 & 2. Total yield, early, mid and late harvest yields, # of melons/A, average soluble solids and average weight per melon are recorded. Tables 3 & 4 list the weight distribution for the total yield in percentage of fruit weighing: 8.0-14.0, 14.1-18.0, 18.1-22.0, and >22.0 lbs. Total yields in 2002 were very good and ranged from 89,631 lbs/A for 'Sugar Slice' to 53,958 lbs/A for 'Fenway'. Percent hollow heart and rind thickness can be found in Tables 5 & 6. Hollow heart percentages ranged from 0 to 67%. See Tables 7 & 8 for descriptions of specific melons for personal preferences in exterior color and markings of each variety.

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Participating Seed Companies

Abbott & Cobb, Inc.	Feasterville, Pennsylvania
D. Palmer Seed	Yuma, Arizona
Harris Moran Seed Co.	Modesto, California
Hazera	Grover Beach, California
Seedway	Elizabethtown, Pennsylvania
Seminis	Kalamazoo, Michigan
Shamrock	Salinas, California
Siegers Seed Co.	Holland, Michigan
Southwestern Seed Company	Casa Grande, Arizona
Sugar Creek	Hinton, Oklahoma
Sunseeds Co.	Acampo, California
Syngenta Seeds, Inc.	Gilroy, California
Willhite	Poolville, Texas
T-Systems International, Inc.	San Diego, California

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Table 1. Yield Results for the 2002 University of Delaware Replicated Seedless Watermelon Variety Trial - Average for Three Replications.

Variety	Trt #	Total Harvest Wt./A (lbs)	Early Harvest Wt./A (lbs)	Mid Harvest Wt./A (lbs)	Late Harvest Wt./A (lbs)	# Melons /A	Avg. S.S.	Avg. Wt./ Melon (lbs)	Source
Sugar Slice	34	89,631	15,730	44,753	29,149	5,359	12.0	17	Willhite
Dillion '5005'	18	86,709	6,901	29,581	50,227	4,927	12.5	18	Hazera
HMX 8913	24	86,221	3,487	33,429	49,304	5,964	12.5	15	Harris Moran
5015	4	84,978	17,662	22,251	45,065	4,581	12.1	18	Hazera
Amarillo (yellow)	28	84,239	15,164	36,715	32,359	5,791	11.8	15	Syngenta
Revolution	20	82,428	16,314	25,549	40,566	4,408	12.0	19	Sunseeds
Tri-X-313	14	81,387	22,316	39,758	19,313	4,840	12.9	17	Syngenta
Sweet Eat'n	19	81,274	18,340	20,423	42,511	4,927	12.3	16	d. palmer seed
Sunsation	5	80,989	2,286	27,506	51,197	3,976	12.5	21	d. palmer seed
Millionaire	12	80,000	15,181	41,763	23,055	4,927	12.1	16	Harris Moran
Tri-X-Palomar	33	79,861	12,355	41,897	25,609	5,099	12.3	16	Syngenta
Cooperstown	3	77,407	13,250	22,939	41,218	4,408	12.3	17	Seminis
Triple Crown	1	75,341	15,657	31,629	28,055	4,840	12.6	16	Seedway
S.W. 4930	30	74,105	5,449	32,372	36,283	3,457	12.6	21	Southwestern
5031	31	73,837	8,872	34,792	30,173	4,149	12.6	18	Seminis
HMX 8914	36	73,137	20,065	14,334	38,738	4,840	12.6	15	Harris Moran
Sugar Shack	16	72,666	15,350	34,559	22,757	4,322	12.0	17	Sugar Creek
Trillion (ACX 257)	35	72,204	9,149	43,958	19,097	4,408	12.3	16	Abbott & Cobb
Sweet Slice	21	72,182	19,356	30,229	22,597	4,408	11.8	16	Willhite
Freedom (3022)	6	71,884	9,939	24,676	37,269	3,717	12.5	19	Sunseeds
Wrigley	17	71,763	14,473	30,372	26,919	4,408	12.2	16	Seminis
7187 HQ	29	70,704	14,780	37,161	18,764	4,494	12.1	16	Abbott & Cobb
Shamen	32	70,151	10,134	25,056	34,961	4,149	12.4	17	d. palmer seed

Premiere	23	69,848	17,805	24,533	27,511	4,322	12.5	16	Southwestern
7177 HQ	22	69,179	15,436	27,684	26,059	4,062	12.3	17	Abbott & Cobb
5244	37	68,716	13,302	27,649	27,766	4,235	12.7	16	Abbott & Cobb
Slice-N-Serve 830	11	68,378	10,264	30,803	27,312	4,581	12.4	15	Southwestern
Seedway 4502	15	67,545	16,962	36,482	14,101	3,803	11.4	18	Seedway
Seedway Exp. 402	25	67,411	14,244	23,941	29,226	5,013	12.7	13	Seedway
Sugarheart	8	67,226	21,244	29,105	16,876	4,149	12.4	16	Siegers
RWT 8096-VP	7	66,936	13,090	31,175	22,671	3,803	12.8	18	Syngenta
7167	10	66,231	17,744	27,575	20,912	4,408	12.4	15	Abbott & Cobb
Gem Dandy	9	63,850	12,238	31,400	20,212	4,322	12.0	15	Willhite
SRW 8055	27	60,065	10,410	28,673	20,981	4,149	12.3	14	Sunseeds
Sugar Time	2	56,836	10,147	23,384	23,306	4,062	11.9	14	Sugar Creek
Genesis	13	54,697	10,756	25,000	18,941	3,889	11.9	14	Shamrock
Fenway (SP6279)	26	53,958	17,532	13,703	22,722	4,581	12.3	12	Seminis
LSD _{0.05}		25,456	11,845	17,471	20,455	1314	0.42	2.11	

Table 2. Yield Results for the 2002 University of Delaware Seedless Watermelon Observational Varieties – Two Replications.

Variety	Trt #	Total Harvest Wt./A (lbs)	Early Harvest Wt./A (lbs)	Mid Harvest Wt./A (lbs)	Late Harvest Wt./A (lbs)	# Melons /A	Avg. S.S.	Avg. Wt./ Melon (lbs)	Source
Seedless Sangia (RWT 8108-VP)	1	76,549	0	27,530	49,019	3,500	12.6	22	Syngenta
Afternoon Delight	2	68,446	11,305	27,355	29,786	3,198	12.1	16	d. Palmer Seed
Butterball (yellow)	3	63,124	11,999	32,573	18,552	3,111	12.0	14	d. Palmer Seed

Table 3. Weight Distribution for Total Yield in the 2002 University of Delaware Replicated Seedless Watermelon Variety Trial.

Trt. No.	Variety	Fruit Weight (lbs.)			
		8.0 - 14.0	14.1 - 18.0	18.1 - 22.0	>22.0
		<i>Percentage of Fruit</i>			
1	Triple Crown	48	46	4	2
2	Sugar Time	47	47	4	2
3	Cooperstown	14	47	24	16
4	5015	9	42	28	21
5	Sunsation	9	20	37	35
6	Freedom (3022)	2	33	44	21
7	RWT 8096-VP	20	34	34	11
8	Sugarheart	27	42	25	6
9	Gem Dandy	40	48	10	2
10	7167	37	51	8	4
11	Slice-N- Serve 830	49	26	19	6
12	Millionaire	32	39	23	7
13	Genesis	51	42	7	0
14	Tri-X-313	18	48	27	7
15	Seedway 4502	23	34	27	16
16	Sugar Shack	26	34	30	10
17	Wrigley	24	45	24	8
18	Dillon '5005'	11	44	40	5
19	Sweet Eat'n	28	39	32	2
20	Revolution (4034)	14	29	37	20
21	Sweet Slice	29	45	14	12
22	7177 HQ	17	49	28	6
23	Premiere	24	50	18	8
24	HMX 8913	42	52	6	0
25	Seedway Exp. 402	69	22	5	3
26	Fenway (SP6279)	82	16	2	0
27	SRW 8055	48	29	21	2
28	Amarillo (yellow) (RWT 8118)	58	25	9	7
29	7187 HQ	35	33	27	6
30	S.W. 4930	10	13	38	40
31	5031	17	40	29	15
32	Shamen	23	38	29	10
33	Tri-X-Palomar	42	31	22	5
34	Sugar Slice	26	47	18	10
35	Trillion (ACX 257)	31	35	29	4
36	HMX 8914	38	43	20	0
37	5244	33	45	14	8

Table 4. Weight Distribution for Total Yield in the 2002 University of Delaware Observational Seedless Watermelon Varieties – Two Replications.

Trt. No.	Variety	Fruit Weight (lbs.)			
		8.0 - 14.0	14.1 - 18.0	18.1 - 22.0	>22.0
		<i>Percentage of Fruit</i>			
1	Seedless Sangria (RWT 8108-VP)	0	11	9	56
2	Afternoon Delight	49	43	3	5
3	Butterball (yellow)	44	53	3	0

Table 5. Percent Hollow Heart, Width of Hollow Heart Opening and Rind Thickness for the 2002 University of Delaware Replicated Seedless Watermelon Variety Trial.*

Trt. No.	Variety	% H.H.	H.H. Avg. Width (inches)	Rind Thickness (inches)
1	Triple Crown	28	0.63	0.58
2	Sugar Time	17	0.35	0.54
3	Cooperstown	17	0.23	0.54
4	5015	56	0.41	0.55
5	Sunsation	28	0.47	0.61
6	Freedom (3022)	50	0.23	0.57
7	RWT 8096-VP	61	0.40	0.53
8	Sugarheart	39	0.30	0.52
9	Gem Dandy	61	0.54	0.64
10	7167	17	0.38	0.59
11	Slice-N- Serve 830	67	0.65	0.61
12	Millionaire	17	0.27	0.57
13	Genesis	17	0.29	0.55
14	Tri-X-313	11	1.07	0.58
15	Seedway 4502	39	0.39	0.55
16	Sugar Shack	17	0.50	0.56
17	Wrigley	17	0.86	0.62
18	Dillon '5005'	44	0.51	0.52
19	Sweet Eat'n	28	0.43	0.52
20	Revolution (4034)	44	0.46	0.51
21	Sweet Slice	11	0.22	0.53
22	7177 HQ	17	0.33	0.56
23	Premiere	61	0.47	0.58
24	HMX 8913	0	0	0.51
25	Seedway Exp. 402	28	0.40	0.52
26	Fenway (SP6279)	39	0.43	0.45
27	SRW 8055	39	0.48	0.51
28	Amarillo (yellow) (RWT 8118)	33	0.50	0.50
29	7187 HQ	11	0.31	0.51
30	S.W. 4930	61	0.37	0.57
31	5031	50	0.37	0.56
32	Shamen	61	0.93	0.53
33	Tri-X-Palomar	11	0.13	0.53
34	Sugar Slice	33	0.46	0.55
35	Trillion (ACX 257)	0	0	0.60
36	HMX 8914	28	0.15	0.43
37	5244	67	0.38	0.55

* Average from 18 melons cut during harvest, largest width of the hollow heart opening, rind thickness measured 2 inches from blossom end of the each melon.

Table 6. Percent Hollow Heart, Width of Hollow Heart Opening and Rind Thickness for the 2002 University of Delaware Observational Seedless Watermelon Varieties –Two replications.*

Trt. No.	Variety	%HH	H.H. Average (inches)	Rind Thickness (inches)
1	Seedless Sangria (RWT 8108-VP)	33	0.20	0.57
2	Afternoon Delight	72	0.46	0.61
3	Butterball (yellow)	0	0	0.48

* Average from 18 melons cut during harvest, largest width of the hollow heart opening , rind thickness measured 2 inches from blossom end of the each melon.

Table 7. Descriptions of the 2002 University of Delaware Replicated Seedless Watermelon Varieties and Seed Sources

Variety	Description	Source
5015	Oblong; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	Hazera
5013	Round/oblong; wide, indistinct, dark-green stripes on a light-green background, resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	Seminis
5244	Oblong; wide indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	Abbott & Cobb
7167	Oblong; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	Abbott & Cobb
7177 HQ	Oblong; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	Abbott & Cobb
7187 HQ	Oblong; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	Abbott & Cobb
Amarillo	Round; thin, dark-green stripes on light-green background, resembles 'Jubilee' markings; yellow flesh.	Syngenta
Cooperstown	Oblong; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	Seminis
Dillion 5005	Oblong; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	Hazera

Fenway (SP6279)	Round; very dark-green color; no stripes; resembles 'Sugar Baby' in appearance; red flesh.	Seminis
Freedom (3022)	Elongated, blocky; thin, distinct, dark-green stripes on a light-green background; markings resemble 'Jubilee'; red flesh.	Sunseeds
Gem Dandy	Round; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	Willhite Seed, Inc.
Genesis	Round/oblong; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	Shamrock
HMX 8913	Oblong; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	Harris Moran
HMX 8914	Oblong; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	Harris Moran
Millionaire	Oblong; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	Harris Moran
Premiere	Oblong; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	Southwestern
Revolution (4034)	Elongate, blocky; wide, dark-green stripes alternating with narrow, light-green stripes; red flesh; 'Allsweet' type.	Sunseeds
RWT 8096-VP	Oblong; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	Syngenta
S.W. 4930	Elongated; wide, indistinct, dark-green	Southwestern

	stripes on a medium-green background; red flesh; 'Allsweet' type.	
Seedway 4502	Oblong/round; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	Seedway
Seedway Exp. 402	Round; very dark-green color; no stripes; resembles 'Sugar Baby' in appearance; red flesh.	Seedway
Shamen	Oblong; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	D. Palmer Seed Co.
Slice-N-Serve 830	Oblong; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	Southwestern
SRW 8055	Round; narrow, distinct, dark-green stripes on a light-green background; resembles 'Jubilee' markings; yellow flesh.	Sunseeds
Sugar Shack	Oblong; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	Sugar Creek Seeds
Sugar Slice	Oblong; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	Willhite Seeds, Inc.
Sugar Time	Oblong; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	Sugar Creek Seeds
Sugarheart	Oblong; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	Siegers Seed Co.

Sunsation	Block/elongated; wide, indistinct, medium-green stripe on very light green background; red flesh	D. Palmer Seed Co.
Sweet Eat'n	Oblong; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	D. Palmer Seed Co.
Sweet Slice	Oblong; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	Willhite Seed, Inc.
Trillion (ACX 257)	Round/oblong; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	Abbott & Cobb
Triple Crown	Oblong; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	Seedway
Tri-X-313	Oblong; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh.	Syngenta
Tri-X-Palomar	Round; thin, dark-green stripes on a medium-green background; resembles 'Queen of Hearts' with a much darker background; red flesh.	Syngenta
Wrigley	Oblong; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	Seminis

Table 8. Descriptions of the 2002 University of Delaware Observational Seedless Watermelon Varieties and Seed Source.

Variety	Description	Source
Afternoon Delight	Oblong; wide, indistinct, dark-green stripes on a light-green background; resembles 'Crimson Sweet' markings; red flesh. Similar to Tri-X-313	D. Palmer Seed Co.
Butterball	Round; distinct, narrow, dark-green stripe on a light-green background; resembles 'Jubilee' markings; yellow flesh	D. Palmer Seed Co.
Seedless Sangria (RWT 8108-VP)	Elongated/blocky, wide, dark-green stripes alternating with narrow, light-green stripes; red flesh; 'Allsweet' type.	Syngenta