

Seedless Watermelon Cultivar Trials for Southwestern Indiana, 2006

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Seedless watermelons continue to generate both grower and consumer excitement, and in many urban markets around the US the percentage of seedless melons purchased has risen considerably. Indiana remains a strong producer of seedless (triploid) watermelons, and since 1994, we have conducted extensive annual variety trials for seedless varieties. This trial, along with the seeded (diploid) watermelon variety trial provides an objective and independent comparative assessment of new watermelons for the commercial industry. This year's study included 32 seedless watermelons, 2 seeded watermelons and one mini watermelon variety.

Methods:

Seeds of 34 watermelon cultivars were sown in the greenhouse on April 17 and transplanted on May 16 into a randomized complete block design with three replications. Royal Sweet was used as the pollinator and planted in every third row and in the guard rows. Plots were single rows 48 ft. long, centered eight ft. apart, and covered with 4 ft. black plastic mulch. Each plot had 12 plants four feet apart. The recommendations in the Midwest Vegetable Production Guide for Commercial Growers (ID-56, 2006) were followed for fertilization, weed, disease and insect control. Trickle irrigation was used as necessary to provide ample water to the field plots. Plots were harvested on July 27, August 3, and 11. The data were analyzed using the Statistical Analysis Software (SAS) package (SAS Institute, Cary, NC). Yield data and quality data for all varieties in the trial are presented in Tables 1 and 2.

Results and Conclusions:

Yields and Quality. Yields ranged from 31.0 to 16.9 tons/acre with 1733 to 5462 fruit/acre harvested across all entries (Table 1). The average weight of seedless fruit was down this year to 16.1 lbs/fruit with a range of 6.2 to 23.7 lbs/fruit. Highest yielding in this trial were: 9570HQ, 7167, Crunchy Red, Sweet Slice Plus, and Matrix. Most of the fruit in the trial this year were round to oval and medium sized. The melon varieties with the highest soluble solids were SW 3130, RWT 8174, Diablo. Seedless watermelons should be a part of your melon production strategy as long as you have a market that will purchase the fruit at a higher price than the seeded watermelons.

The majority of cultivars tested produced watermelon in the 12-18 lb range (Table 3). Notable exceptions are Matrix and ACR5534T which produced the majority of fruit in the 18-24 lb category. If a larger fruit size is desirable, Diablo produced most of its fruit in the 24-32 range. On the opposite end of the size spectrum is the mini seedless variety 2071. It produced most of its fruit in the 4-6 lb range.

Table 1. Comparison of Yield of Seedless Watermelon in Southwestern Indiana, 2006.

Cultivar	Seed Source	Yield Cwt/Acre	Yield ^z Tons/Acre		Fruit No./Acre	Average Fruit Weight
9570 HQ	AC	620.7	31.0	a	3691	16.9
7167	AC	607.0	30.4	ab	3541	17.1
Crunchy Red	HM	602.5	30.1	abc	3390	17.8
Sweet Slice Plus	WI	595.4	29.8	abcd	3503	17.0
Matrix	RG	577.6	28.9	abcde	2938	19.7
Intruder	SWS	570.7	28.5	abcdef	3465	16.5
313	RG	564.0	28.2	abcdef	3541	15.9
RWT 8174	RG	561.1	28.0	abcdef	3315	17.0
ACR 5624T	AC	560.0	28.0	abcdef	3239	17.3
HMX 4915	HM	556.9	27.9	abcdef	3993	13.9
Liberty	NU	552.8	27.6	abcdef	3277	16.9
Olympia	SM	545.7	27.3	abcdef	3503	15.6
SSX 7041	STS	545.5	27.3	abcdef	3541	15.4
Palomar	RG	544.1	27.2	abcdef	3616	15.0
SW 3130	SWS	543.4	27.2	abcdef	3578	15.3
Sweet Slice	WI	539.3	27.0	abcdef	3390	16.0
Constitution	NU	536.0	26.8	abcdef	3541	15.1
Revolution	NU	533.1	26.6	abcdef	2938	18.2
Slice-N-Serve	SWS	532.4	26.6	abcdef	3428	15.5
Tomcat	SWS	530.4	26.5	abcdefg	3390	15.7
SW 2501	SWS	528.1	26.4	abcdefg	3465	15.3
RWT 8173	RG	522.9	26.1	abcdefg	3089	16.9
Triple Threat	RG	516.7	25.8	bcdefg	3729	13.8
Cooperstown	SM	508.1	25.4	cdefgh	3013	16.8
Independence	NU	507.7	25.4	cdefgh	3315	15.3
Candy	WI	506.4	25.3	cdefgh	2787	18.2
ACR 5534T	AC	500.5	25.0	defgh	2674	18.7
Provider	STS	499.9	25.0	defgh	3239	15.3
SW 4806	SWS	481.3	24.1	efgh	3164	15.1
5335	SM	474.5	23.7	fgh	3691	12.9
Fenway	SM	470.4	23.5	fgh	3691	12.9
Chiquita	WI	431.0	21.5	ghi	2448	17.6
Diablo	WI	412.3	20.6	hi	1733	23.7
2071	KW	337.8	16.9	i	5462	6.2
Grand Mean		526.9	26.3		3362	16.1
L.S.D. (5%)		100.4	5.0		669	1.4
C.V. (%)		11.7	11.7		12	5.3

Table 1 notes:

^x Yield wt. (tons) averages spanned by the same letter are not significantly different.

Table 2 notes:

^q %SS = Percent soluble solids: the higher the value, the greater the amount of total sugar.

^r Flavor (1 to 5): 1=very poor, 3=acceptable, 5=great.

^s Uniformity (1 to 3): 1=lacks uniformity/variable, 2=average, 3=very uniform.

^t Length: Length of fruit from stem attachment end to blossom end (in)

^u Width: Width of fruit as measured following a longitudinal cut from stem end to blossom end (in)

^v Ratio: Length divided by the width of the fruit

^w Shape: Rd=Round, Ov=Oval, Ob=Oblong.

^x Flesh: LR=light red, RO=red-orange, R=red, LP=light pink, P=pink, DP=dark pink, Y=yellow.

^y Degree of Seedlessness (1 to 3): 1=brown or black seeds present, 2=white seeds present, 3=no seeds present.

^z Pressure: Pressure test reading in pounds per square inch

Table 2. Comparison of Quality of Seedless Watermelon in Southwestern Indiana, 2006.

Cultivar	% SS ^q	Flavor ^r	Uniformity ^s	Length ^t	Width ^u	Ratio ^v	Shape ^w	Flesh ^x	Degree of Seedlessness ^y	Pressure ^z
9570 HQ	11.0	2.4	3.0	10.4	9.2	1.1	Rd	P	3	3.0
7167	12.0	3.5	2.0	10.4	9.1	1.1	Rd	DP	3	2.0
Crunchy Red	10.0	3.5	3.0	11.2	8.7	1.3	Ov	P	3	2.5
Sweet Slice Plus	9.5	3.7	3.0	10.5	9.3	1.1	Rd	R	2	2.5
Matrix	11.0	3.3	2.0	15.1	9.3	1.6	Ob	R	1	2.0
Intruder	11.5	3.0	2.0	10.3	9.6	1.1	Rd	DP	3	3.5
Tri-X 313	11.5	2.8	2.0	11.3	9.5	1.2	Ov	DP	2	2.0
RWT 8174	12.5	3.3	3.0	10.9	9.2	1.2	Ov	R	3	3.0
ACR5624T	9.0	3.0	2.0	12.4	11.0	1.1	Ov	R	3	2.0
HMX 4915	11.5	3.5	3.0	11.0	9.0	1.2	Ov	R	2	3.5
Liberty	12.0	3.0	1.0	11.0	8.9	1.2	Ov	R	3	2.0
Olympia	9.0	2.3	2.0	11.4	9.1	1.3	Rd-Ov	DP	3	2.0
SSX 7041	11.0	4.2	3.0	11.0	9.4	1.2	Ov	R	3	1.5
Tri-X-Palomar	12.0	3.7	3.0	10.2	10.0	1.0	Rd	R	3	3.0
SW 3130	13.0	4.2	1.0	11.0	8.5	1.3	Rd	R	3	2.5
Sweet Slice	10.2	3.0	3.0	10.6	9.5	1.1	Rd	DP	2	2.2
Constitution	11.0	3.8	3.0	9.9	9.1	1.1	Rd	R	3	2.0
Revolution	10.5	2.8	2.0	13.8	9.1	1.5	Ob	R	3	2.5
Slice-N-Serve	11.5	3.7	2.0	10.4	9.3	1.1	Rd	DP	2	3.0
Tomcat	11.5	3.3	3.0	12.2	9.3	1.3	Ov	DP	3	2.0
SW 2501	12.0	3.0	3.0	11.0	9.0	1.2	Rd-Ov	R	3	3.0
RWT 8173	11.0	2.8	2.0	12.0	9.7	1.2	Ov	DP	2	1.0
Triple threat	11.0	3.0	3.0	9.6	8.9	1.1	Rd	R	2	2.0
Cooperstown	10.0	3.4	1.0	11.1	9.2	1.2	Rd-Ov	R	3	3.0
Independence	11.5	3.8	3.0	10.8	9.3	1.2	Rd	R	3	2.5
Candy	7.5	2.8	1.0	11.3	9.5	1.2	Rd-Ov	R	2	2.0
ACR5534T	10.5	1.9	1.0	11.1	9.3	1.2	Ov-Ob	DP	2	2.0
Provider QV776	9.0	3.5	3.0	12.2	9.6	1.3	Ov	R	3	3.0
SW 4806	11.0	3.9	2.0	10.0	9.7	1.0	Rd	DP	3	2.0
5335	11.0	3.9	3.0	10.6	8.8	1.2	Ov	DP	2	2.0
Fenway	10.5	2.8	3.0	10.0	9.7	1.0	Rd	R	3	2.0
Chiquita	10.0	2.4	2.0	14.0	9.0	1.6	Ob	R	Seeded	2.0
Diablo	12.5	3.3	2.0	19.3	9.1	2.1	Ob	R	Seeded	2.0
2071	11.0	3.5	3.0	8.0	6.7	1.2	Rd	R	3	2.5

Table 3. Percent of fruit broken down into size categories.

Cultivar	<4^z	4-6	6-8	8-12	12-18	18-24	24-32	>32
9570 HQ				12	55	29	4	
7167				5	56	36	2	
Crunchy Red				4	54	37	4	
Sweet Slice Plus				9	60	26	5	
Matrix				5	28	51	15	
Intruder				5	65	27	2	
Tri-X 313				12	65	23		
RWT 8174				9	52	32	7	
ACR5624T				5	59	31	5	
HMX 4915				28	58	13		
Liberty				9	63	29		
Olympia				12	66	22	1	
SSX 7041				12	68	20		
Tri-X-Palomar				25	52	22	1	
SW 3130				16	65	19		
Sweet Slice				10	60	30		
Constitution				15	74	11		
Revolution				4	50	42	4	
Slice-N-Serve				20	62	18		
Tomcat				20	57	22	2	
SW 2501				8	78	14		
RWT 8173				12	51	32	5	
Triple threat				29	65	5	1	
Cooperstown				8	55	35	3	
Independence				16	64	10	10	
Candy				9	48	43		
ACR5534T				4	37	52	7	
Provider QV776				13	65	21	1	
SW 4806				19	60	21		
5335			1	38	58	3		
Fenway			2	43	52	3		
Chiquita				6	54	37	2	2
Diablo				2	20	26	43	9
2071	6	43	37	14				

^z Size Categories in lbs.