

## Seedless Watermelon Cultivar Trials for Southwestern Indiana, 2004

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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 36 seedless watermelons, including one yellow fleshed type and one orange fleshed variety.

### Methods:

Seeds of 36 seedless watermelon cultivars were sown in the greenhouse on April 13 and transplanted on May 10 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, 2004) were followed for fertilization, weed, disease and insect control. Trickle irrigation was used as necessary to provide ample water to the field plots. This year, for the first time, we detected *Fusarium* in our research plots. The impact of this disease was noted. In an effort to report the most accurate comparisons possible, any variety that tested positive for the presence of *Fusarium* was dropped from the variety analysis. Plots were harvested on July 21, 29, August 4, 11, and 17. The remaining 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 Table 2. No statistical yield differences were detected when all data were combined, likely due to the significant impact of *Fusarium* on one or more replications of certain varieties.

### Results and Conclusions:

Yields and Quality. Yields ranged from 22.9 to 36.3 tons/acre with 2420 to 5101 fruit/acre harvested across all entries (Table 1). The average weight of seedless fruit was down this year to 15.4 lbs/fruit with a range of 12.7 to 19.5 lbs/fruit. Smaller weight per fruit led to the higher number of fruit per acre in general. Highest yielding in this trial were: Sweet Delight, 7167, HMX 8913, Palomar, and 313, though few yield differences in this trial were statistically significant. Most of the fruit in the trial this year were oval and medium sized. Notable melon varieties exhibiting high soluble solids include Sweet Delight, Palomar, and Sunny. This year one yellow fleshed variety, Butterball, and one orange fleshed watermelon, Sunny, were submitted. 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.

Table 1. Comparison of Yield and Quality of Seedless Watermelon in Southwestern Indiana, 2004.

Cultivar	Seed Source	Yield Cwt.Lb/A	Yield <sup>r</sup> Tons/A	Fruit No./A	Avg fruit weight		Flavor <sup>t</sup>	Uniformity <sup>u</sup>	Rind <sup>v</sup>	Size <sup>w</sup>	Shape <sup>x</sup>	Flesh <sup>y</sup>	Degree of Seedlessness <sup>z</sup>
					Lbs	%SS <sup>s</sup>							
Sweet Delight 7167	SY	726.2	36.3 a	4696	15.8	11.0	3	3	M	M	Ov	R	3
HMX 8913	AC	724.5	36.2 a	4771	15.2	10.6	3	1	M	M-L	Ov	P	3
Palomar	HM	723.0	36.1 a	5067	14.2	10.4	5	2	M	M	Ov	R	2
313	SY	712.0	35.6 a	5101	14.0	11.2	3	3	M	M	R	DP-R	3
Sunny	SY	706.5	35.3 a	4613	15.3	11.0	3	2	Th	M-L	Ov	R	2
Gypsy	WI	681.3	34.1 ab	3770	18.0	11.2	4	3	M	L	Ob	O	3
WX 270	HM	658.3	32.9 ab	4613	14.4	10.2	3	3	T	S-M	R	R	1
Summertime	WI	638.9	32.0 ab	4235	15.2	9.6	5	2	M	M	Ov-Ob	R	3
4502	DP	630.4	31.5 ab	4576	13.7	10.2	4	3	M	S-M	R	R	3
Independence	SW	617.9	30.9 ab	3706	16.7	10.2	2	3	M	M	R	LP	2
5244	SU	613.3	30.7 ab	4386	14.1	10.8	5	3	T	M	Ov	DP	3
Butterball	AC	604.1	30.2 ab	4122	14.2	10.8	4	2	M	M	Ov	R	2
RWT 8145	DP	587.1	29.4 ab	4235	13.8	8.8	2	3	M	S-M	R	Y	3
ACX 570T	SY	583.4	29.2 ab	3359	17.3	10.6	4	1	M	L-VL	Ob	R	2
WX28	AC	580.2	29.0 ab	4170	13.9	9.6	4	3	M	M	R-Ov	DP-R	3
Sweet Slice	WI	564.5	28.2 ab	2912	19.5	7.6	2	1	Th	L-VL	Ob	DP	3
Sagi	WI	549.5	27.5 ab	3743	14.6	10.4	4	3	M	M	R	DP-R	3
	ST	457.5	22.9 b	2420	17.9	10.2	2	2	Th	L	Ov	DP	3
Grand mean		631.0	31.6	4139	15.4								
LSD (5%)		234.7	11.7	1396	2.6								
C.V. (%)		22.4	22.4	20	10.0								

Randomized complete block design: 3 replications.

<sup>r</sup> Yield wt. (tons) averages spanned by the same letter are not significantly different.

<sup>s</sup> %SS = Percent soluble solids: the higher the value, the greater the amount of total sugar.

<sup>t</sup> Flavor (1 to 5): 1=very poor, 3=acceptable, 5=great.

<sup>u</sup> Uniformity (1 to 3): 1=lacks uniformity/variable, 2=average, 3=very uniform.

<sup>v</sup> Rind: T=thin, M=medium, Th=thick.

<sup>w</sup> Size: S=small, M=medium, L=large, VL=very large.

<sup>x</sup> Shape: Rd=round, Ov=oval, Ob=oblong.

<sup>y</sup> Flesh: LR=light red, RO=red-orange, R=red, LP=light pink, P=pink, DP=dark pink, Y=yellow.

<sup>z</sup> Degree of Seedlessness (1 to 3): 1=brown of black seeds present, 2=white seeds present, 3=no seeds present.

Table 2. Comparison of Yield and Quality of ALL Seedless Watermelon in the 2004 trial. Values here include plots that were affected by *Fusarium*. No statistical differences were detected when all data were combined, which is likely due to the impact of disease in one replication of this experiment. For valid statistical comparisons of cultivars not impacted by *Fusarium*, please refer to Table 1.

Cultivar	Seed Source	Yield Tons/A	Fruit No./A	Avg fruit weight		Flavor	Uniformity	Rind	Size	Shape	Degree of	
				Lbs	%SS						Flesh <sup>y</sup>	Seedlessness
Sweet Delight	SY	36.3	4696	15.8	11.0	3	3	M	M	Ov	R	3
7167	AC	36.2	4771	15.2	10.6	3	1	M	M-L	Ov	P	3
HMX 8913	HM	36.1	5067	14.2	10.4	5	2	M	M	Ov	R	2
Palomar	SY	35.6	5101	14.0	11.2	3	3	M	M	R	DP-R	3
313	SY	35.3	4613	15.3	11.0	3	2	Th	M-L	Ov	R	2
Sunny	WI	34.1	3770	18.0	11.2	4	3	M	L	Ob	O	3
Gypsy	HM	32.9	4613	14.4	10.2	3	3	T	S-M	R	R	1
WX 270	WI	32.0	4235	15.2	9.6	5	2	M	M	Ov-Ob	R	3
Summertime	DP	31.5	4576	13.7	10.2	4	3	M	S-M	R	R	3
4502	SW	30.9	3706	16.7	10.2	2	3	M	M	R	LP	2
Independence	SU	30.7	4386	14.1	10.8	5	3	T	M	Ov	DP	3
5244	AC	30.2	4122	14.2	10.8	4	2	M	M	Ov	R	2
Butterball	DP	29.4	4235	13.8	8.8	2	3	M	S-M	R	Y	3
RWT 8145	SY	29.2	3359	17.3	10.6	4	1	M	L-VL	Ob	R	2
ACX 570T	AC	29.0	4170	13.9	9.6	4	3	M	M	R-Ov	DP-R	3
WX28	WI	28.2	2912	19.5	7.6	2	1	Th	L-VL	Ob	DP	3
Millionaire	HM	28.0	3627	15.4	10.0	3	2	M	M	Ov	P	3
Sweet Slice	WI	27.5	3743	14.6	10.4	4	3	M	M	R	DP-R	3
Sweet Eat'n	DP	27.4	3407	15.8	10.8	4	2	M	M	Ov	R	3
Afternoon Delight	DP	27.2	3731	14.0	9.6	3	3	M	M	Ov	P	3
401	SW	24.6	3063	10.7	9.8	4	3	T	M	Ov	DP	3
402	SW	24.5	3723	13.0	10.0	4	2	T	S	R-Ov	P	3
Liberty	SU	24.3	3138	10.4	10.6	5	2	M	M	Ov	R	3
SW 2908	SW	23.7	3185	15.2	11.2	5	3	T	S-M	R	R	3
Sagi	ST	22.9	2420	17.9	10.2	2	2	Th	L	Ov	DP	3
Cooperstown	SM	22.2	2946	14.2	10.8	4	3	M	M	Ov	R	3
7187	AC	21.7	2685	10.8	9.2	3	3	Th	M-L	Ov	R	2
WT-04-53	DP	21.4	2231	18.7	10.6	4	1	Th	L-VL	R-Ov	R	3
Fenway	SM	21.0	3630	7.8	10.6	4	3	T	S	R	R	2
WT-04-60	SP	19.1	2534	10.1	9.2	4	2	T	S-M	R	Y	2
Sunday Special	ST	19.0	2767	14.5	10.8	3	3	M	S	R-Ov	R	3
Majestic	SM	18.8	2647	9.4	10.2	5	3	M	M	Ov	R	3
Trillion	AC	17.9	2496	9.4	10.2	2	2	M	M-L	Ov	P	3
HMX 9917	HM	17.3	2496	9.1	11.0	4	3	M	S-M	R	P	3
Olympia	SM	15.8	2138	9.9	10.6	3	3	M	M	Ov	R	3
Constitution	SU	13.0	1880	9.0	10.2	3	2	T	S-M	R	DP	3