

Seedless and Seeded Watermelon Variety Evaluations

**John Strang, Katie Bale, John Snyder, Daniel Carpenter and Chris Smigell,
Department of Horticulture**

Sixteen triploid, seedless and five standard, seeded watermelon varieties were evaluated in a replicated trial for their performance under Kentucky conditions.

Materials and Methods

Varieties were seeded on April 26 into Styrofoam plug trays (72 cells per tray) at the Horticulture Research Farm in Lexington. Plants were set into black plastic-mulched, raised beds using a waterwheel setter on May 25. Each plot was 20 feet long, with 6 plants set 4 feet apart within the row and 8 feet between rows. Each treatment was replicated four times in a randomized complete block design. Fifty lbs./A N as ammonium nitrate and 100 lbs./A 0-0-60 were applied and incorporated into the field prior to bed shaping and planting. Drip irrigation was used to provide water and fertilizer as needed.

The plot was fertigated with a total of 30 lbs./A N as ammonium nitrate divided into five applications over the season. Twelve and a half pounds of Epsom salts were applied through the irrigation lines. The systemic insecticide Admire 2F was applied with a hand sprayer as a drench to the base of each plant after transplanting; using the maximum rate of 24 fl. oz./A. Foliar insecticide applications included Pounce, Capture, and Spintor. Weekly foliar fungicide applications included fixed copper, Bravo, Quadris, and Cabrio. Curbit and Sandea, pre-emergent herbicides were applied and incorporated between the rows, when the vines had grown off the plastic mulch. One fruit from each replication was measured and evaluated for flavor, soluble solids, interior color, rind thickness, and type.

Results

The growing season was hot and extremely dry and watermelon quality and taste were excellent. A hailstorm on June 5 killed some plants and damaged many others. Dead and severely damaged plants were replaced however there were not enough plants to replant several varieties in the fourth replication. Additionally, weeds became a problem in the fourth replication and consequently the fourth replicate was omitted from the statistical analysis. No virus was observed and all fruit were harvested once per week. Harvest and evaluation data are in Tables 1 and 2.

Although yield values in Table 1 range from roughly 600 to 1,200 cwt/A, there was no significant difference in yield between any of the seeded or seedless varieties. This is attributed to wide variations in yield between replications and the lack of a fourth replication in the analysis. The high quality of all melons in the trial also made it difficult to find varieties that stood out.

Stars 'N Stripes, one of the seeded standards in the trial, performed very well in terms of yield and quality, as did StarGazer and Sangria. Sangria, an old variety, consistently has an outstanding taste and is a good indicator of exceptional taste. Carson had a nice red flesh color

and the highest taste rating of the seeded melons.

Revolution was the best large elongated seedless variety. Crunchy Red, Vagabond, Sugar Heart, Olympia, and Independence were excellent oblong melons and Harmony, Poquito, Cooperstown, Indiana, and Ruby were excellent round watermelons. Indiana was the earliest maturing melon at 76 days and had the highest taste rating of the seedless melons. Poquito is a mini or palm melon when planted at a closer spacing and it had the second highest taste rating of the seedless watermelons.

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Table 1. Seedless and seeded watermelon harvest values and fruit characteristics, Lexington, Ky., 2007

Variety	Seed Source	Days to Harvest	Yield (cwt/A) ¹		Avg. No. Fruit/A	Avg. Wt./Fruit (lbs.)	Culls (%) ²	Outside Measurements		Rind Thickness (in.)	Interior Measurements	
								Length (in.)	Width (in.)		Hollow Heart ³	Seeds/Fruit (no.) ⁴
Seeded												
Stars 'N Stripes	SW	85	1,195.2	a	4,462	27.0	1.7	16.4	8.8	0.7	1.5	-
StarGazer	RU	85	1,123.4	a	4,840	23.0	0	17.1	8.8	0.6	1.8	-
Sangria	SW	87	1,059.5	a	4,764	22.2	0	18.1	8.8	0.6	1.5	-
Carson	SW	85	984.1	a	3,857	25.1	3.6	17.1	8.9	0.5	2.0	-
Jamboree	SW	88	771.8	a	2,723	28.3	0	17.1	9.5	0.6	1.5	-
Seedless												
Crunchy Red	SW	90	1,138.2	a	5,445	20.8	0	11.8	9.5	0.7	2.0	2.7
Harmony	SW	84	1,052.8	a	6,882	15.2	0	10.9	9.6	0.7	2.0	1
Millenium	SW	78	944.7	a	6,882	13.7	0	10.7	8.6	0.5	1.7	1
Vagabond	SW	82	902.1	a	5,521	16.6	0	11.1	9.4	0.7	2.0	2
Sugar Heart	SI	85	896.5	a	5,369	16.8	0	11.3	9.3	0.7	1.8	1
Olympia	RU	85-90	881.6	a	4,764	18.3	0	12.1	9.9	0.7	2.0	1.8
Independence	SW	85	876.2	a	5,143	17.0	0	12.0	9.8	0.6	1.8	1.8
Poquito	RU	90	851.5	a	5,521	15.6	0	11.1	9.7	0.6	2.0	1.8
Matrix	SW	86	838.9	a	4,008	20.9	0	13.5	9.0	0.6	2.0	1
Cooperstown	SW	86	820.5	a	4,916	16.9	0	10.5	9.6	0.6	2.0	1
Gypsy	SW	82	810.1	a	4,916	16.4	0	10.5	10.0	0.6	2.0	1.8
Revolution	SW	84	800.8	a	4,159	19.5	0	14.5	9.1	0.6	2.0	2.5
Indiana	SW	76	729.9	a	5,067	14.5	1.2	9.5	9.1	0.6	2.0	0.8
Ruby	SW	85	664.7	a	4,311	15.9	0	10.7	9.6	0.6	1.7	1.7
Genesis	SW	82	658.5	a	4,613	14.4	0	10.1	9.5	0.6	1.5	3.0
Crisp 'N Sweet	SI	83	597.2	a	3,479	18.3	1.6	10.8	9.3	0.7	2.0	2.0

¹Numbers followed by the same letter are not significantly different (Waller-Duncan LSD P=0.05). Hundredweight (cwt) = 100-lb. units per acre.

²Cull percent by weight.

³Hollow heart: 1 = hollow heart (any amount) observed, 2 = no hollow heart.

⁴Seeded varieties were not inspected for seed number. Only hard seeds were counted.

Table 2. Seedless and seeded watermelon fruit characteristics, Lexington, Ky., 2007.

Variety	Taste (1-5) ¹	Sugar (%)	Flesh Color ²	Rind Color ³	Comments
Seeded					
Stars ‘N Stripes	4.3	11.6	pk rd	CS	Tender flesh, nice flavor, harvest when ground spot is dark yellow and large
StarGazer	4.4	11.9	pk rd	AS	Tender flesh, very attractive interior, large seeds, susceptible to sunburn, uniform shape among melons
Sangria	4.5	11.8	rd	AS	Bright colored tender flesh, attractive interior and exterior, medium-sized seeds, some sunburn
Carson	4.6	11.6	rd	AS	Tender flesh, attractive, red interior, nice flavor, medium-sized seeds, uniform shape among melons
Jamboree	4.4	12.1	rd, pk rd	AS	Tender flesh, nice, sweet flavor, lots of medium-sized seeds
Seedless					
Crunchy Red	4.3	12.2	lt rd, pk	lt gr md gr stripes	Crunchy, firm flesh, very attractive interior, tiny, black undeveloped seeds, ground spot must be very yellow
Harmony	4.5	11.5	rd, pk rd	CS	Bright firm flesh, harvest when ground spot is straw color and large
Millenium	4.5	12.7	pk, pk rd	BK	Some with interior white fibrous material
Vagabond	4.5	11.6	pk rd	md gr dk stripe	Firm, crunchy flesh, attractive interior, nice flavor, harvest when ground spot is very yellow
Sugar Heart	4.5	11.9	pk rd	CS	Crisp, medium firm flesh, harvest when ground spot is dark straw color

¹Taste: 1= poor, 5 = excellent, sweet taste, pleasant texture.

²Flesh color: rd = red, pk = pink, lt = light.

³Rind color: AS= Allsweet, medium green rind w/dark green, broad mottled stripes; JU= Jubilee, light green rind with distinct, narrow, dark green stripes; BK=Black, solid dark green rind; CS= Crimson Sweet, light green rind w/mottled, dark green stripes; dk = dark; gr = green; lt = light; md = medium.

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Table 2 (continued)

Variety	Taste (1-5) ¹	Sugar (%)	Flesh Color ²	Rind Color ³	Comments
Seedless (continued)					
Olympia	4.4	11.7	pk rd	md gr narrow stripe	Crisp firm flesh, attractive interior and exterior
Independence	4.5	12.7	pk, pk rd	dk CS	
Poquito	4.6	12.3	pk rd	CS	Firm flesh, excellent flavor
Matrix	4.3	11.3	rd, pk rd	AS	Tender flesh, nice, sweet flavor, harvest when ground spot is dark yellow and large
Cooperstown	4.4	11.6	pk rd	CS	Tender flesh, attractive interior, good flavor
Gypsy	4.4	12.0	pk	md. gr, dk stripe	Tender flesh, very good flavor
Revolution	4.5	11.9	rd, pk rd	AS	Very attractive, red interior, excellent flavor
Indiana	4.7	12.5	pk rd	JU dk background	Very attractive exterior, some dark, undeveloped seeds, early maturing
Ruby	4.5	12.1	pk rd	md gr w/dk gr stripes	Firm flesh, very attractive exterior
Genesis	4.0	11.5	lt rd	CS	
Crisp 'N Sweet	4.3	11.8	lt rd pk	CS	Harvest when ground spot is light straw color

¹Taste: 1= poor, 5 = excellent, sweet taste, pleasant texture.

²Flesh color: rd = red, pk = pink, lt = light

³Rind color: AS= Allsweet, medium green rind w/dark green, broad mottled stripes; JU= Jubilee, light green rind with distinct, narrow, dark green stripes; BK=Black, solid dark green rind; CS= Crimson Sweet, light green rind w/mottled, dark green stripes; dk = dark; gr = green; lt = light; md = medium