

Eastern Muskmelon Trials for Southwestern Indiana, 2004

Christopher C. Gunter^{1*}, Melborn K. Lang², Dennis Nowaskie², Angie Thompson²

¹Horticulture Specialist at the Southwest Purdue Agricultural Program,
Vincennes, IN 47591

²Southwest Purdue Agricultural Center, Vincennes, IN 47591

*Author to whom correspondence should be addressed

Indiana is a leader in the nation for production of eastern muskmelon with Knox, Sullivan, and Gibson counties ranking in the top 100 melon producing counties. The evaluation of newly released varieties and advanced experimental breeding lines is independent assessment of new melons for growers and seed producers in the commercial melon industry. The objective of this study was to comparatively evaluate and identify potential new cultivars and advanced experimental breeding lines that may be adaptable to the growing conditions in southwestern Indiana. Growers are seeking high yielding, high quality, early maturing types with excellent disease resistance and acceptable keeping quality during shipping and storage. Fruit need to be medium to large and have high uniformity in both size and shape. Traditionally, markets have demanded fruit with heavy netting and distinct ridges. Melons that can be stored and held easily for longer periods of time, and those that could be harvested at a slightly earlier slip-stage and still retain acceptable quality would also be desirable.

Experimental Setup:

Twenty one eastern muskmelon cultivars and advanced experimental lines were evaluated in a randomized complete block design with three replications. Each entry was first direct seeded in the greenhouse on April 15, 2004 and transplanted into the field on May 10, 2004. Plots consisted of single 55-foot long rows, covered with 4 ft. wide black plastic mulch. Rows were centered six feet apart, and between plant spacing (within a row) was 2.5 ft., allowing 22 plants per row. Each variety and experimental line was grown in accordance with the recommendations outlined in the Midwest Vegetable Production Guide for Commercial Growers (ID-56, 2004). Trickle irrigation lines placed beneath the plastic mulch provided water as needed. Fruits were harvested three times a week by hand from July 6, 2004 through August 2, 2004. Data was analyzed with the SAS Software package (SAS Corp., Cary, NC).

Results:

High Yield, Earliness, and Internal Quality Rating: The average yield was 22.7 tons/acre with a range of 16.5 to 29.8 tons/acre (Table 1). The mean fruit weight was 6.7 lbs/fruit with a range of 4.9 to 9.0 lbs/fruit. This translated to 5544 to 8933 fruit/acre with a mean fruit number of 6830 fruit/acre. Crescent Moon had the highest yield in this years trial followed by Superstar, Aphrodite, PS 1461-1013, and Odyssey. The earliest fruit in this trial were harvested at 82 days. Quality ratings of each tested variety or advanced experimental line showed variability in soluble solids, shape, size, uniformity, flavor, netting and the degree of ridges on the fruit surface (Table 2). Selected comments noted during quality evaluation are mentioned here: Aphrodite, Moneyloupe, EA 70, HMX 2605, and HMX 2606 all had soluble solids measured above 12% (brix). The highest flavor ratings in this trial were Aphrodite, Odyssey, Minerva, HMX 2607, EA 70, and Savannah. Most fruit were medium to large sized with good uniformity. Heavy netting and a thick rind are also desirable characteristics and only HMX 2607 exhibited both of these characteristics.

Table 1. Yield comparison of Eastern muskmelon cultivars in Southwestern Indiana, 2004.

Cultivar	Seed Source	Days to harvest	Yield Cwt.Lb/A	Yield ² Tons/A	Fruit No./A	Avg fruit weight Lbs	% of fruit harvested between:		
							7-6 7-14	7-15 7-24	7-25 8-2
Crescent Moon	SE	82	595.3	29.8 a	7216	8.3	36.6	47.8	15.6
Superstar	HM	82	522.7	26.1 b	6820	7.7	45.2	36.7	18.1
Aphrodite	RG	84	514.4	25.7 bc	7084	7.2	28.4	42.5	29.1
PS 1461-1013	SM	82	512.2	25.6 bc	8008	6.4	22.6	48.7	28.7
Odyssey	SW	86	510.8	25.5 bc	6424	8.0	16.3	75.5	8.1
SVR 1416-1016	SM	84	502.0	25.1 bcd	5544	9.0	21.3	53.0	25.8
Jaipur	SM	84	486.9	24.3 bcde	7612	6.4	9.9	76.4	13.7
Eclipse	SM	87	481.4	24.1 bcde	7040	6.9	25.4	59.0	15.6
Minerva	RG	82	462.9	23.1 bcdef	5984	7.7	34.7	34.8	30.5
HSR 4227	HL	82	458.7	22.9 bcdef	6688	6.9	33.8	43.0	23.2
Moneyloupe	AC	86	452.8	22.6 bcdef	5588	8.1	24.3	60.4	15.3
HMX 2607	HM	84	447.9	22.4 cdef	6248	7.2	21.7	50.2	28.1
EA 70	AC	82	443.1	22.2 cdef	8096	5.5	46.6	35.3	18.1
HSR 4128	HL	82	438.5	21.9 defg	8932	4.9	48.8	29.5	21.6
Gold Doubloon	AC	84	428.6	21.4 efg	5940	7.2	37.8	34.7	27.5
HMX 2606	HM	87	418.0	20.9 efg	6908	6.1	9.8	74.5	15.7
HMX 2605	HM	86	417.1	20.9 efg	7392	5.7	16.9	68.9	14.1
Athena	RG	82	399.7	20.0 fgh	7612	5.2	34.0	35.1	30.9
Savannah	DP	88	369.2	18.5 gh	6512	5.7	6.8	49.6	43.5
Delta	DP	87	332.4	16.6 h	5588	6.0	27.5	59.8	12.7
Saticoy	RU	92	329.6	16.5 h	6204	5.3	2.8	46.2	51.0
Grand mean		84	453.5	22.7	6830	6.7	26.3	50.6	23.2
LSD (5%)		3	71.6	3.6	1151	0.7	18.9	22.4	14.9
C.V. (%)		2	9.6	9.6	10	6.1	43.7	26.9	39.0

Table 2. Quality comparison of Eastern muskmelon cultivars in Southwestern Indiana, 2004.

Cultivar	Seed Source	%SS ^r	Shape ^s	Size ^t	Uniformity ^u	Flavor ^v	Netting ^w	Ridges ^x	Rind ^y	Seed ^z cavity
Crescent Moon	SE	8.0	Ov	L	3	3	3	3	2	L
Superstar	HM	9.0	Rd	L	2	3	2	3	3	M
Aphrodite	RG	12.0	Ov	L	2	4	2	1	2	M
PS 1416-1013	SM	11.0	Ov	M	2	2	2	2	3	L
Odyssey	SW	8.4	Ov	M-L	2	4	2	2	2	L
SVR 1416-1016	SM	9.2	Ov	M-L	2	3	3	1	2	M
Jaipur	SM	8.6	Ov	M-L	2	2	3	1	2	L
Eclipse	SM	8.4	Rd	M	3	3	2	1	3	L
Minerva	RG	10.4	Ov	L	2	4	3	2	2	L
HSR 4227	HL	9.0	Ov-Ob	M	1	1	1	2	2	L
Moneyloupe	AC	12.0	Ov	M-L	2	3	2	1	3	L
HMX 2607	HM	10.0	Rd	M	3	4	3	1	3	L
EA 70	AC	12.0	Rd	M	3	4	2	3	1	L
HSR 4128	HL	8.0	Rd	M	3	3	3	1	2	L
Gold Doubloon	AC	8.0	Ob	L	3	3	2	3	3	L
HMX 2606	HM	12.5	Ov	M	3	3	3	1	2	M
HMX 2605	HM	12.0	Ov-Ob	M	2	3	3	1	1	M
Athena	RG	11.6	Rd-Ov	M	3	3	2	1	3	L
Savannah	DP	10.0	Rd	S	3	4	3	2	2	L
Delta	DP	7.0	Ob	M	2	3	2	1	1	M
Saticoy	RU	11.8	Ov	M	2	3	1	1	2	L

r %SS = Percent Soluble Solids: the higher the value, the greater the amount of total sugar.

s Shape: Rd=round, Ov=oval, Ob=oblong.

t Size: S=small, M=medium, L=large, VL=very large.

u Uniformity (1 to 3): 1=lack all uniform/variable, 2=average, 3=very uniform.

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

w Netting (1 to 3): 1=weak, 2=moderate, 3=heavy.

x Ridges (0 to 3): 0=absent, 1=light, 2=moderate, 3=heavy/large.

y Rind (1 to 3): 1=thin, 2=moderate, 3=thick.

z Seed cavity: S=small, M=medium, L=large, VL=very large.