

Specialty Melon Replicated Variety Evaluation and Observation Trial

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Introduction

Seventeen specialty melon varieties were evaluated in a replicated trial and six in an observation trial for their performance under Kentucky conditions. These included Asian, canary, cantaloupe, casaba, charentais, crenshaw, galia, gourmet, heirloom, and honeydew melons.

Materials and Methods

Varieties were seeded on 29 April into Styrofoam plug trays (72 cells per tray) at the Horticulture Research Farm in Lexington. Plug trays were set on a mist bench with bottom heat until seeds germinated, then moved to a drier, cooler bench in the greenhouse, where the seedlings were thinned to one per cell. Plants were set into black plastic-mulched, raised beds using a waterwheel setter on 1 June. Each plot was 21 feet long, with 7 plants set 3 feet apart within the row and 6 feet between rows. Each replicated treatment was replicated 4 times in a randomized complete block design. Observation treatments were replicated twice randomly throughout the replicated planting. Drip irrigation was used to provide water and fertilizer as needed.

Forty-two pounds of N/A as ammonium nitrate and 75 lb K/A as potassium chloride were applied and incorporated into the field prior to bed shaping and planting. The plot was fertigated with a total of 42 lbs N/A as ammonium nitrate divided into seven applications over the season. Epsom salts foliar sprays were applied twice. The systemic insecticide Admire 2F was applied by hand as a drench to the base of each plant after planting, using the maximum rate of 24 fl oz/A. Foliar insecticide applications included Sevin, Pounce, and Capture. Weekly foliar fungicide applications included Bravo, Quadris, and Nova. Curbit preemergent herbicide was applied and incorporated between the rows, just as the vines began to grow off the plastic mulch. One fruit from each replication was measured and evaluated for flavor, soluble solids, interior color, rind color and net type.

Results

The growing season was dry and hot, consequently disease pressure was minimal. No virus was observed. Vine cover was thick, with no plant death. Magnesium deficiency became apparent on most of the galia melon plants later in the season despite foliar magnesium applications.

Fruit were generally harvested twice a week. Melon sugar contents were high. Harvest and evaluation data for the replicated trial are in Tables 1 and 2, while the observation trial results can be found in Tables 3 and 4. Most melon varieties evaluated previously performed well.

Replicated Trial

Crenshaw. Bolero is a high yielding excellent tasting large melon that appeared to hold up well after harvest. Flesh was thick and attractive and the variety was superior to others of this type evaluated in previous years. However, the dark rind sunburned severely during this hot season.

Casaba. Honey I Dew performed very well in this trial. Flavor was outstanding and the sugar content was very high. Its bright golden rind was attractive, although it sometimes developed dark surface spots. Honey I Dew was very similar in appearance to canary melons.

Canary. Golden Beauty again performed exceptionally well, producing high yields of high quality, attractive melons with no culls.

Honeydew. Neither of the honeydews were exceptional. Honey Orange did not have as good a flavor and exterior appearance as in the previous two seasons.

Galia. HSR4278 and Vicar performed exceptionally well. Both had excellent yield, superior taste and sugar content with few culls.

Specialty melons. Sunrise and Napoli do not seem to fit any melon class. They resemble small tightly netted cantaloupes on the exterior, but they do not have the musky flavor of cantaloupes and Napoli has light green flesh. Melon flavor and flesh texture are excellent, fruit are very uniform in size and have a relatively long harvest period. These varieties have the potential to be developed into a specialty niche market.

Gourmet. Sensation is an outstanding melon in terms of flavor, sugar content and its relatively long harvest period for this type of melon. It was also observed to hold fairly well in refrigerated storage.

Heirloom. Jenny Lind, Prescott Fond Blanc and Noir de Carmes performed very poorly in this trial. All were unattractive, had low yields and became over mature very rapidly. Melon flavor was very poor in comparison to the other melons evaluated. The Jenny Lind evaluated this year had a green flesh, very apparent buttons at the blossom end of the fruit and green flesh as described in the literature for this variety. The Jenny Lind evaluated last season from Johnnys Seeds had an orange flesh and was far superior to this Jenny Lind.

Asian. Neither Asian melon looked good in this years trial. Golden Liner was one of the better performing Asian melons in the 2004 observation trial, but this season powdery mildew was a serious problem even with a weekly fungicide spray program.

Observation Trial

Cantaloupes. Athena, the current, “gold standard” for cantaloupes had excellent quality, but tended to be at the low end in terms of yield. HSR4270, HSR4276 and Halona all looked very good. The two numbered selections must be harvested at half slip and no later to preserve eating quality. Halona had a very good, but slightly muskier flavor.

Charentais. Serenade was grown for market evaluation this season in an adjacent plot. This has been an outstanding melon in the previous two seasons of evaluation in that it had exceptional quality, was moderately attractive and did not split open as all of the other charentais melons have over the years. However, this season this variety developed excessive surface checking and did not look marketable.

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Table 1. Specialty melon variety trial yield and fruit characteristics, Lexington, KY, 2005.

Variety	Melon Type ¹	Seed Source	Days to Harvest	Yield (cwt/A) ²	Avg. No. Melons/A	Avg Wt./fruit (lbs.)	Culls (%)	Outside Measurements			Seed	
								Length (in.)	Width (in.)	Flesh Thickness (in.)	Length (in.)	Width (in.)
Bolero	CR	SI	95-100	955 a	9853	9.8	0.0	8.0	7.5	2.0	5.6	3.5
Honey IDew	CS	GU	84	853 ab	12100	7.1	0.0	9.1	6.7	1.7	5.9	3.1
Golden Beauty	CA	JS	80	851 ab	13224	6.5	0.0	9.4	7.0	1.7	6.3	3.5
Amarillo Oro	CA	BC	100	455 ef	7606	6.0	0.0	10.8	6.7	1.8	7.7	3.2
Honey Ace	HD	SI	75	848 ab	13915	6.1	3.2	7.4	7.2	2.0	4.0	2.9
Honey Orange	HD	JS	80	400 fg	8989	4.5	1.0	7.7	6.4	1.7	5.0	3.0
HSR4278	GA	HL	75	787 bc	16479	4.8	1.8	7.4	6.3	2.0	4.2	2.1
Vicar	GA	SY/RG	86	773 bc	19101	4.1	0.5	6.1	6.4	2.0	3.5	2.5
Visa	GA	SW	78	702 c	16854	4.2	0.0	7.1	6.2	2.0	4.0	2.2
Sunrise	SP	EV	72	696 c	19706	3.5	0.0	5.6	5.6	1.5	3.6	2.5
Napoli	SP	EV	72	549 de	18409	3.0	0.5	5.0	5.0	1.5	3.3	2.3
Sensation	GO	HL	80	658 cd	13569	4.9	2.6	7.0	6.2	1.8	3.5	2.8
Jenny Lind	HE	BC	80	403 fg	15816	2.5	1.1	5.4	6.0	1.4	3.6	3.3
Prescott Fond Blanc	HE	BC	95	395 fg	7519	5.3	0.0	5.1	7.6	1.4	2.8	3.9
Noir de Carnes	HE	BC	75	322 fg	18150	1.8	2.2	4.8	5.2	1.2	3.0	3.2
Yellow Star	AS	SI	70	298 g	25410	1.2	0.0	5.5	3.1	0.7	4.2	1.6
Golden Liner	AS	EV	65	290 g	27830	1.0	0.0	5.5	3.0	0.7	4.3	1.6

¹ Melon Type: AS = Asian melon, CA = canary, CR = Crenshaw, CS = casaba, GA = galia, GO = gourmet, HD = honeydew, HE = heirloom, SP = specialty type.

² Numbers followed by the same letter are not significantly different (Waller-Duncan LSD P = 0.05). Cwt/A = hundred weights (100 lb. units) per acre.

Table 2. Specialty melon trial fruit characteristics, Lexington, KY, 2005.

Variety	Flavor (1-5) ¹	Sugar (%)	Interior Color ²	Rind Color ³	Fruit Shape	Cracking (1-4) ⁴	Net Type ⁵	Comments
Bolero	4.6	13.9	or	gr and yl	oval	1.0	none	Dark rind sunburns, pick at slip when rind starts to turn yellow, coarse checking, melon size variable.
Honey I Dew	4.5	14.3	lg	gd	almond	1.0	none	Develops small brown spots at harvest sometimes.
Golden Beauty	4.1	13.5	cry lg	gd	almond	1.0	none	Excellent, harvest when rind is golden yellow.
Amarillo Oro	3.6	12.0	cry lg	gd	almond	1.0	none	Harvest when rind is golden yellow.
Honey Ace	4.2	14.4	lg	lg	round	3.2	none	Very sweet, some surface checking, harvest when exterior and ground spot turn a cream color.
Honey Orange	4.0	12.8	or	lg	oval	1.0	none	Considerable rind checking, harvest when exterior and ground spot turn a cream color.
HSR4278	5.0	12.7	lg	str yl	oval	1.0	med	Very nice, small seed cavity, pick at early slip.
Vicar	4.4	14.0	lg	str yl	round	1.0	lt	Musky flavor, harvest at first sign of yellow.
Visa	4.1	12.5	lg	str yl	oval	2.0	lt	Attractive interior, harvest at first sign yellow.
Sunrise	4.2	12.8	or	str	round	1.0	lt	Dense, small fruit, good taste, harvest at first sign of yellow, long period for optimum harvest.
Napoli	4.7	15.7	lg	str lg	round	1.2	lt	Sweet mild Flavored flesh, harvest at first slip.
Sensation	4.7	13.6	cry lg	str lg	oval	1.0	med	Attractive, tastes good even when overripe, slight rind checking pick at slip, longer period for optimum harvest.
Jenny Lind	1.5	7.7	lg with pk interior	str yl	heart shaped	2.0	coarse	Does not resemble last years Jenny Lind.
Prescott Fond Blanc	1.3	6.0	or	str	pumpkin	1.0	lt	Very deep sutures.
Noir de Carnes	1.0	5.1	or	dg and o	round	2.5	none	Very short harvest season, deep sutures.
Yellow Star	2.5	10.3	cr	by	elongated	1.0	none	Harvest when rind is bright yellow.
Golden Liner	1.8	6.9	cry wh	by	elongated	1.0	none	Harvest when rind is bright yellow, susceptible to powdery mildew, which causes vine to die.

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

²Interior color: o=orange, cr = cream, lg = light green, wh = white, cry=creamy, pk=pink

³Rind color: lg = light green, gr = green, dg = dark green, yl = yellow, by = bright yellow, str=straw, o=orange, gd=gold

⁴Cracking: 1= little or no cracking, 4 = severe cracking & fruit splitting.

⁵Net type: lt = light netting, md = medium netting, na = none

Table 3. Specialty melon fruit characteristics from two replications, Lexington, Kentucky, 2005.

Variety	Melon Type ¹	Seed Source	Days to Harvest	Yield (cwt./A) ²	Avg. No. Melons/A	Avg. Wt./Fruit (lbs.)		Outside measurements		Flesh		Seed Cavity	
						Culls (%)	Length (in.)	Width (in.)	Thickness (in.)	Length (in.)	Width (in.)		
HSR4250	MM	HL	87	860	15039	5.7	2.3	7.5	6.8	2.0	4.5	2.7	
HSR4270	MM	HL	87	754	10717	7.1	0.0	8.5	6.9	2.2	5.6	2.6	
HSR4260	MM	HL	87	709	9680	7.3	3.5	7.4	6.8	1.8	4.4	3.1	
HSR4276	MM	HL	83	666	11581	5.8	0.0	8.1	6.6	2.1	5.1	2.3	
Halona	MM	HL	83	651	10890	6.0	1.5	6.9	6.8	2.0	4.1	2.6	
Athena	MM	SW	83	547	9161	6.0	0.0	8.6	6.8	1.9	5.8	2.9	

¹Melon type: MM = muskmelon

²cwt = hundred weight per acre

Table 4. Specialty melon fruit and vine characteristics from two replications, Lexington, Kentucky, 2005.

Variety	Flavor ¹ (1-5)	Sugar (%)	Interior Color ²	Rind Color ³	Fruit Shape	Cracking ⁴ (1-4)	Net Type ⁵	Comments
HSR4250	2.3	8.4	or	straw w/ lt gr	round	1.0	hv	Pick at _ slip, attractive orange flesh.
HSR4270	3.8	13.0	or	cr	oval	1.0	med. coarse	Must be picked at _ slip, large melon, no sutures, attractive exterior and interior.
HSR4260	3.0	10.8	salmon	straw gr	round	2.0	hv	Pick at _ slip, no sutures.
HSR4276	3.5	10.3	or	cr	oval	1.5	med	Pick at _ slip.
Halona	3.9	12.5	or	cr	round	2.5	lt	Very musky, deep sutures.
Athena	4.1	11.4	or	beige	oval	1.5	lt	Excellent variety.

¹Flavor: 1 = poor, 5 = excellent, sweet taste, pleasant texture

²Interior color: It = light, gr = green, cr = cream, or = orange, dk = dark, wh = white

³Rind color: It = light, gr = golden, gr = green, or = orange, cr = cream, lt = light, med = medium, dk = dark

⁴Cracking: 1 = little or no cracking, 4 = severe cracking and fruit splitting

⁵Net type: It = light netting, med = medium netting, hv = heavy raised netting, na = no netting