Trial Report: Cantaloupe Variety Evaluation 2016

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Contents

We would like to thank participating companies for their support.

Production
Location: Tifton, GA
Entries: 13 Cantaloupes
Planting date: Three-week old transplants were transplanted 17 March.
Plant Spacing: 6' centers black polyethylene mulch (60- inch wide plastic), 22-inch in-row spacing (3960 per acre pop.)
Plot Size: 10 plants per plot (single row) with 5 foot alleys between adjacent plots in-row
Fumigation: Pic Clor 60 with TIF plastic.
Fertility: 1000 lbs 5-10-15 under plastic when laid. Drip irrigation applied roughly 1 inch of water per week. Fertigation provided with 7-0-7 at a rate of 10 lbs/N/acre week. (130 lbs N total). Herbicide: Row middle applications of Chateau, Goal 2XL, Curbit, and Dual Magnum.
Pest Control: Weekly fungicide and insecticide sprays according to UGA recommendations.
Pollination Services: 6 hives adjacent to planting.

Data Collection

Stand count conducted 1 April.

Harvests conducted: 78,81,83,86,88,90,93,97,103 days after transplant – Due to cool early season temperatures plants grew very slowly at first, hence a late harvest.

Fruit weighing less than 2 lbs were discarded. Fruit were harvested at ¼ slip on eastern melons, while LSL melons were cut when netting reached the stem or when the melon turned to a uniform pale green color. Fruit were placed into the following groups for boxes:

15 count:-2.35-3.00 lbs; 12 count: 3.01-3.89 lbs; 9 count: 3.90 lbs-5.60 lbs; 6 count >5.61 lbs

Fruit from the main harvest for a given variety were utilized for quality measurements. Average firmness was determined using an 8 mm probe with a hand-held firmness tester from 2 locations on 2 melons (4 readings) per replication. Average brix was obtained from teaspoon sample of flesh from each of the 4 melon subsets from each replicate which was crushed using a hand-held lemon press and read using a hand-held refractometer. ***NOTE* Due to heavy rain on 5 June, melons that had a majority of fruit harvested near that time (Eastern Shipping Melons) (8 and 10 June) had lower sugar readings than later (LSL) types.*** Statistics were conducted using SAS Version 9.3. Proc GLM and Fisher's least significant test were conducted when appropriate. Subsampling procedures were used for firmness ratings.

Table 1. Entries in Trial

Harris Moran	Hollar	Sakata	Seminis	Syngenta	US Agriseeds
Fiji	Grand Slam	Atlantis	SV5196	Athena	USAMR15331
Samoa				Aphrodite	USAMR15332
HMX5591				ME3176	USAMR14836
				ME3743	

Results

Harvests were delayed due to cool weather and slow growth early in the trial. Plants were transplanted one week earlier in 2016 than in 2015, but the first harvest was delayed by nearly 2-weeks compared to 2015. The first harvest was conducted when there were at least 2-3 melons (Eastern) per plot at ¼ to ½ slip. The highest numerical yielding variety was USAMR14836, a long shelf-life melon from US Agriseeds. This variety was harvest later in the trial (Table 4), with most fruit harvested 93 days and later after transplanting. This variety was not significantly different from 6 other varieties in terms of total yields. This variety was also the firmest melon trialed. 'Athena', the industry standard for Eastern melons was the highest yielding Eastern type in the trial and the second highest yielding melon overall. Aphrodite and ME3743 were the two largest melons, with ME3743 having the highest yield (by a wide margin) of 6-count fruit.

Sugars and firmness were highest in LSL types, harvested late in the trial. Many of the Eastern types had low sugars due to a rain even on 5 June that reduced brix readings in harvests taken at 81-85 days (peak harvest for these types of melons). The LSL types, harvested later in the season had significantly higher sugar ratings than the Eastern types.

Table 2. Total yield in (40 lb) boxes and weight per acre. *Note that due to rounding to maintain significant digits (to nearest ten boxes or lbs) boxes per acre and lbs per acre may not always match exactly they would if no rounding were done.*

Variety	Total Yield		6 Count				9 Count				12 Count				15 Count			
	lb/acre		Boxes/acre		lb/acre		Boxes/acre		lb/acre		Boxes/acre		lb/acre		Boxes/acre		lb/acre	
USAMR14836	67,790	a	300	cde	10,590	cde	1160	a	48,310	a	170	bc	7,160	bc	40	bc	1,720	bc
Athena	60,670	ab	450	bcd	16,230	bcd	840	bc	36,400	ab	160	bc	6,730	bc	30	bc	1,310	bc
Samoa	59,610	ab	510	bc	18,480	bc	870	ab	36,620	ab	80	cd	3,380	cd	30	bc	1,140	bc
USAMR15332	59,340	ab	510	bc	19,210	b	790	bcd	34,120	bc	110	bcd	4,630	bcd	30	bc	1,390	bc
ME3743	58,090	ab	880	a	33,490	a	500	def	22,600	cde	20	d	900	d	30	bc	1,110	bc
HMX5591	56,060	abc	460	bcd	17,030	bcd	730	bcd	30,720	bcd	190	bc	7,950	bc	10	c	370	c
Atlantis	50,730	bcd	500	bc	18,490	bc	650	b-f	27,490	bcd	80	cd	3,600	bcd	30	bc	1,140	bc
MR3716	47,540	bcd	430	bcd	16,040	bcd	620	b-f	26,550	b-e	110	bcd	4,400	bcd	10	c	550	c
USAMR15331	46,290	bcd	130	ef	4,710	ef	780	bcd	32,500	bc	170	bc	6,830	bc	50	bc	2,250	bc
Grand Slam	45,800	bcd	250	de	8,820	de	680	b-e	28,670	bcd	150	bc	6,380	bc	50	bc	1,930	bc
Fiji	41,000	cd	20	f	560	f	350	f	13,850	e	470	a	19,490	a	170	a	7,100	a
Aphrodite	40,100	d	570	b	21,700	b	410	ef	17,940	de	10	d	460	d	0	c	0	c
SV5196	37,080	d	80	ef	3,100	ef	550	c-f	22,010	cde	210	b	8,740	b	80	b	3,230	b

Table 3. Average melon weight, brix, and firmness.

Variety	Avg. Wt.		Brix		Firmness	
	lb		%		lb Force[z]	
Aphrodite	5.8	a	9.5	def[y]	5.6	cd
ME3743	5.8	a	9.7	defy	6.5	bc
USAMR15332	5.4	ab	10.2	c-f	7.2	bc
ME3716	5.1	bc	9.7	def[y]	5.4	cd
Samoa	5.0	bcd	11.7	abc	6.3	bc
Atlantis	5.0	bcd	9.0	ef[y]	3.9	d
HMX5591	4.9	bcd	10.8	b-e	7.1	bc
Athena	4.8	cde	8.8	f[y]	6.2	bc
USAMR14836	4.7	cde	12.3	ab	10.8	a
Grand Slam	4.6	de	9.8	c-f[y]	8.2	b
USAMR15331	4.4	ef	13.4	a	8.2	b
SV5196	4.1	f	11.1	bcd	7.3	bc
Fiji	3.6	g	12.6	ab	7.9	b

[z]Firmness determined using an 8 mm probe; [y]Sugars on melons with superscript "y" were measured during peak harvest – this occurred after a rainfall, causing them to be notably lower than other varieties

Table 4. Yield by harvest date.

	Percent harvested at each harvest date (%)								
Variety	**79[z]**	**81**	**83**	**86**	**88**	**90**	**93**	**97**	**103**
Aphrodite	-	26.3	15.2	19.2	5.5	5.8	15.0	5.2	7.8
Athena	-	28.7	9.4	21.7	13.0	11.5	8.2	1.0	6.4
Atlantis	18.0	-	19.4	21.8	13.1	10.5	4.6	5.4	7.2
Fiji	-	-	-	-	1.9	-	2.5	34.8	60.7
Grand Slam	21.4	-	7.4	25.6	11.6	14.5	4.5	9.8	5.2
HMX5591	-	-	-	-	4.2	-	3.4	12.8	79.6
ME3743	-	32.5	6.9	11.9	12.6	3.0	12.8	18.6	1.7
MR3716	-	29.5	10.5	12.4	8.0	3.6	15.2	9.3	11.6
Samoa	-	-	-	-	6.7	-	34.0	22.8	36.5
SV5196	24.3	-	16.7	16.4	9.4	-	12.4	10.1	10.8
USAMR14836	-	-	-	-	10.5	-	40.7	38.9	9.9
USAMR15331	-	-	-	-	9.7	-	4.1	22.6	63.6
USAMR15332	-	-	-	4.2	13.6	-	13.1	45.9	23.1

[z]Days from transplanting.