

## **Cantaloupe Variety Trial - 2018**

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## Field experimental design and crop management

*Location:* Tifton, GA

*Entries:* 5

Table 1. List of varieties.

<b>Treatment</b>	<b>Variety</b>
1	Athena
2	Aphrodite
3	Infinite Gold
4	Davinci
5	F-39

### *Planting date and spacing:*

Five-week-old transplants were planted on March 27, 2018. Transplants were planted in black plastic mulch with raised beds 6-inches tall. Beds were set on 6-ft centers with a single row of 22-inch of in-row planting spacing (3967 plants per acre).

### *Plot size:*

Plots were comprised by 10 plants with 4 replication per variety. A total of 20 plots were arranged as a randomized complete block design.

### *Pest management:*

Plastic mulch was fumigated with Pic-chlor 60 at the time of application, while insecticides and pest management programs follow the UGA recommendations.

### *Fertilizer management:*

Prior to planting 500 lb of 10-10-10 fertilizer (Rainbow, Agrium) was applied under plastic mulch, followed by a weekly fertigation program with 7-0-7 liquid fertilizer applied at a rate of 12 lb./acre of nitrogen until harvest.

### *Irrigation management:*

After transplant, water was daily applied at an irrigation depth of 0.2-in for a 20 days period to ensure plant establishment. After this point, water was applied according to the crop evapotranspiration.

### *Harvest*

Fruit were harvested 6-times beginning on 1 June and ending on 19 Jun. Fruit were individually weighed and placed in the following groups for boxes:

**23 count: 1.5-1.72lb; 18 count 1.73-2.24 lb; 15 count: 2.25-3.00 lb; 12 count: 3.01-3.89 lb;  
9 count: 3.90-5.60 lb; 6 count > 5.61 lb**

Fruit from a representative harvest were analyzed for firmness, determined using an 8 mm probe with a hand-held firmness tester from 2 locations on 2 melons (4 readings) per replication, total of soluble solids (Brix), 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, rind size, and seed cavity.

### *Statistical analysis*

Statistical analyses were performed using the software R studio v.3.5.1 (RStudio team, 2018). When the *F*-value of an ANOVA was significant, a multiple means comparison was performed using Tukey-Kramer at a *p*-value of 0.05.

## **Results**

There were significant differences among cantaloupe varieties for total yield and fruit average weight. The highest total yield was measured for Athena and Aphrodite, but they had no significant differences from Infinite Gold and Davinci. The lowest total yield was measured for F-39. Fruit average weight was the highest for Athena and Aphrodite and the lowest for Davinci and F-39.

Regarding the fruit size distribution, there were significant difference among varieties for the 23 count, 18 count, 15 count, 12 count, 9 count, and 6 count. Table 1 has yield results for

each count per variety. In general, the cantaloupe varieties Athena and Aphrodite had the highest yields for large size fruit (i.e., 6 count, 9 count, and 12 count), while the varieties Davinci and F-39 had the highest yield of small size fruit (i.e., 23 count, 18 count, and 15 count).

Cantaloupe fruit quality was significantly different among varieties for brix, firmness, rind size, and seed cavity. Cantaloupe had the highest brix for Davinci, but this variety did not differ from Infinite Gold. Infinite Gold and Davinci also had the highest firmness, but the lowest rind size. Seed cavity was the highest for Aphrodite followed by Athena.

Overall, the cantaloupe varieties Athena, Aphrodite, Infinite Gold, and Davinci had great yields and fruit quality. Variety selection will depend on grower's market. Athena and Aphrodite have large fruit sizes but low number of fruit; contrarily, the variety Davinci have small fruit sizes but high number of fruit.

<b>Table 1. Total yield and yield per count (ct) of Cantaloupes in the 2018 trial.</b>								
Variety	(pounds/acre)							(pounds)
	Total Yield	23-ctz	18-ct	15-ct	12-ct	9-ct	6-ct	Avg. Weight
Athena	33,740 <sub>ay</sub>	0 <sub>c</sub>	350 <sub>c</sub>	2,660 <sub>c</sub>	7,550 <sub>ab</sub>	17,510 <sub>a</sub>	5,670 <sub>a</sub>	4.2 <sub>a</sub>
Aphrodite	32,780 <sub>a</sub>	190 <sub>bc</sub>	440 <sub>c</sub>	3,470 <sub>bc</sub>	9,150 <sub>ab</sub>	12,070 <sub>b</sub>	7,470 <sub>a</sub>	4.0 <sub>a</sub>
Infinite Gold	32,070 <sub>ab</sub>	410 <sub>abc</sub>	710 <sub>c</sub>	9,170 <sub>a</sub>	12,590 <sub>a</sub>	9,190 <sub>b</sub>	0 <sub>b</sub>	3.3 <sub>b</sub>
Davinci	24,120 <sub>ab</sub>	2,320 <sub>a</sub>	5,660 <sub>b</sub>	8,370 <sub>ab</sub>	7,430 <sub>ab</sub>	330 <sub>c</sub>	0 <sub>b</sub>	2.4 <sub>c</sub>
F-39	21,790 <sub>b</sub>	2,070 <sub>ab</sub>	9,190 <sub>a</sub>	8,250 <sub>ab</sub>	1,950 <sub>b</sub>	320 <sub>c</sub>	0 <sub>b</sub>	2.3 <sub>c</sub>
z23 count: 1.5-1.72lb; 18 count 1.73-2.24 lb; 15 count: 2.25-3.00 lb; 12 count: 3.01-3.89 lb; 9 count: 3.90-5.60 lb; 6 count >5.61 lb								
yValues in the same column followed by the same letter(s) are not significantly different according to Tukey-Kramer test (P<0.05).								

<b>Table 2. Quality of Cantaloupes in the 2019 trial.</b>				
Variety	Soluble Solids (Brix)	Firmness <sub>y</sub>	Rind	Seed Cavity:Melon
	(%)	(lbf)	(inches)	
Athena	11.1 <sub>bz</sub>	5.3 <sub>bc</sub>	0.32 <sub>a</sub>	0.46 <sub>ab</sub>
Aphrodite	11.1 <sub>b</sub>	3.8 <sub>cd</sub>	0.19 <sub>bc</sub>	0.52 <sub>a</sub>
Infinite Gold	11.6 <sub>ab</sub>	7.3 <sub>a</sub>	0.16 <sub>c</sub>	0.42 <sub>bc</sub>
Davinci	12.3 <sub>a</sub>	7.0 <sub>ab</sub>	0.13 <sub>c</sub>	0.40 <sub>bc</sub>
F-39	9.5 <sub>c</sub>	2.2 <sub>d</sub>	0.25 <sub>ab</sub>	0.35 <sub>c</sub>
zValues in the same column followed by the same letter(s) are not significantly different according Tukey-Kramer test (P<0.05).				
y8-mm hand held probe.				