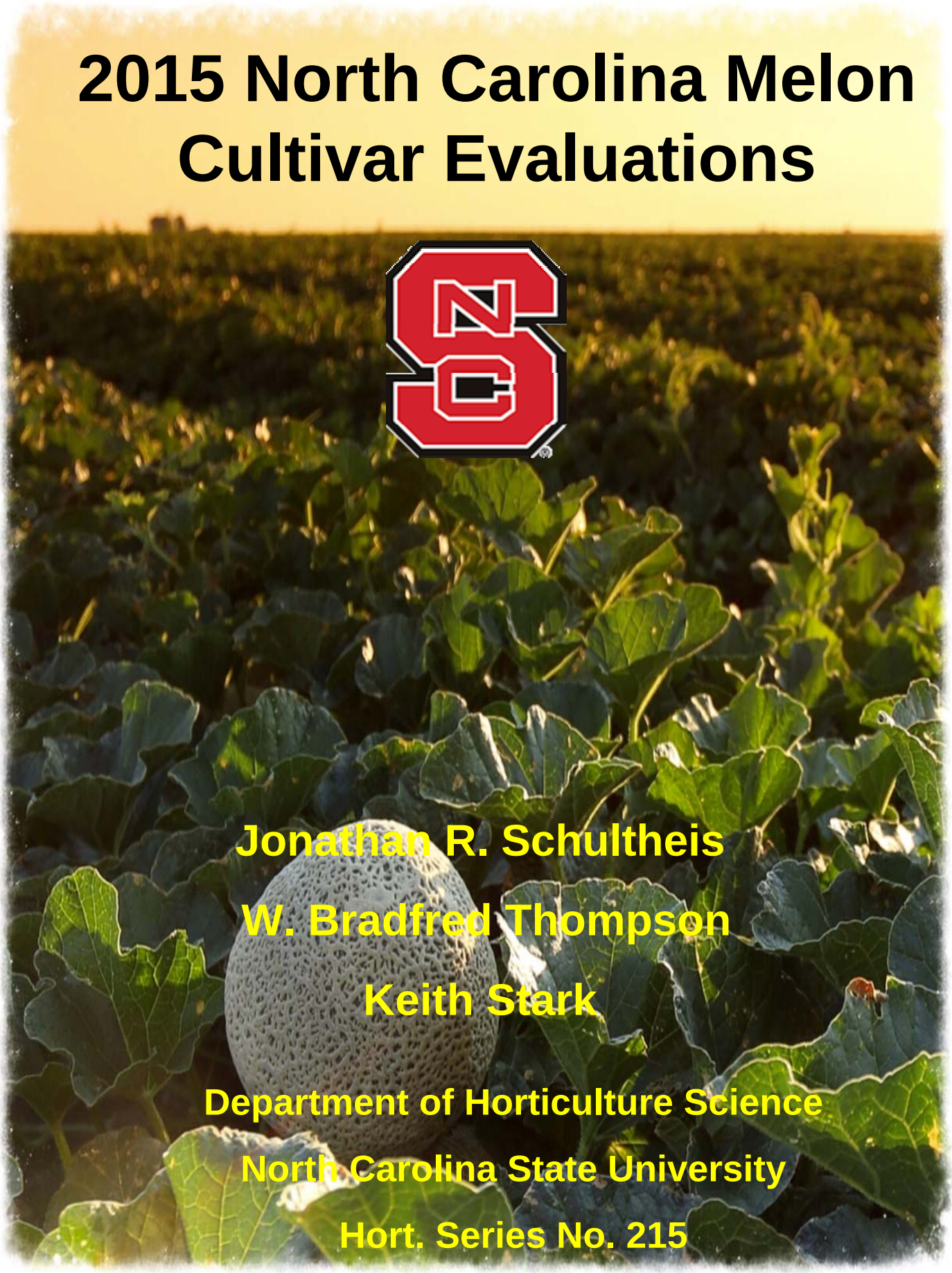
2015 North Carolina Melon Cultivar Evaluations



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North Carolina State University
Melon Cultivar Evaluations

Hort. Series #215

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General Cultural Practices

All melon trials were grown using recommended practices for commercial melon production in North Carolina. All plots in the study were under black plastic mulch and fertigated with drip irrigation. Furthermore, pesticides used on all plots were chemicals labeled for use on that crop, (2015 North Carolina Agricultural Chemicals Manual, (http://ipm.ncsu.edu/Agchem/agchem.html).

Acknowledgments

We gratefully acknowledge the assistance of Phillip Winslow (Superintendent) and Chris Lee (Horticulture Supervisor), Cunningham Research Station, Kinston, NC, as well as the research station personnel in establishing, maintaining, and harvesting the melon cultigen evaluation trial. We want to acknowledge the following for their assistance with the trial: Dennis Adams, Victoria Cox, Brooke Hadley, Elizabeth (Libby) Indermaur, Laura Page, and Dayne Shelor. The cooperation and support of Bayer Crop Science, DP Seeds, Origene Seeds, Rijk Zwaan, Sakata Seed, Seminis Seed Company, and Syngenta Seeds, Inc. were also appreciated.

Disclaimer

This publication presents data from the cultivar evaluation trial conducted during 2015. Information in this report is believed to be reliable but should not be relied upon as the sole source of information. Limited accompanying detail is included but excludes some pertinent information, which may aid interpretation.

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Introduction

The acreage of melon production is not published for North Carolina in recent years. However, total harvested muskmelon/cantaloupe acreage in 2012 in the United States was reported to be 64,050 (http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1478). Further reporting listed average yield per acre in the United States to be 265 cwt, with average price per cwt being $19.20. Total value in the U.S. cantaloupe/muskmelon (orange flesh melons) industry was also reported to be about $325 million. Production acreage in North Carolina is believed to be between 3,000 to 4,000 acres. Most melons grown in North Carolina are the eastern type with the principle cultivar grown being Athena for the past 20 years. In addition to the eastern type cantaloupe/muskmelon, other orange flesh melons being grown in much small acreages include Extended Shelf Life (ESL) melons, often termed Harper melons,; and Italian or Tuscan melons. The ESL melons, as the name suggests, will hold for a longer period than the eastern type melons. ESL melons are more difficult to determine when ready for harvest and this in large part has delayed wide spread adoption of this melon type. The flesh in commercially grown ESL melons is usually firmer and sweeter than eastern melon types. The Italian type melon tends to split easier than the ESL or eastern types. In spite of these weaknesses with ESL and Italian type melons, there has been some success in growing and marketing these newer melon types by North Carolina growers. A new version of the eastern melon type was introduced into the 2015 North Carolina melon cultivar trial. Two of them were Rijk Zwaan lines (34-741 and 34-742), and 1 from Seminis (SV5196). These fruit have slight ribbing, with firmer flesh than 'Athena'. These new types will also exhibit a straw or tan rind color and will slip at harvest making it easier to determine when the fruits are ready to harvest. A total of 20 advanced lines or cultivar entries (cultigens) were placed in the 2015 study by 7 seed companies to evaluate the melon entries for yield, earliness, and various other qualities. The entries were as follows.

Rijk Zwaan (4) - 34-741, 34-742, Caribbean Gold, Caribbean King

Syngenta Seeds (1) – Athena

Sakata Seed (4) – Atlantis, Avatar, Infinite Gold, Timeless Gold

Seminis Seed (3) – Banzai, Florida, SV5196MF

Origene Seeds (2) – Diva, Restart

DP Seeds (2) – El Gordo, Napoli

Bayer Crop Science (4) – Maxi-East, Dura-West, NUN 26367, Sweet East

Materials and Methods

Commercial seed companies were contacted in February and March to obtain seed for the muskmelon cultigen evaluation trial. All seed were acid treated for bacterial fruit blotch on 8 April 2015. Seed were sown into 72 cell Poly trays to grow transplants (Hummert Int.; Earth City, MO) on 15 April. The planting medium used was a Fine Germinating Mix, a commercial soil less mix (Carolina Soil Company; Kinston, NC). A complete fertilizer (10-10-20 at 600 lbs/ac) was broadcast applied over the entire area that was planted on 14 April. Preplant fertilizer was incorporated by discing the field and Telone II Fumigant (6.5 gal/ac) was soil injected in tandem with laying black polyethylene plastic

(0.70 mil thick high density plastic film, 48 inches wide; B.B. Hobbs, Clinton, NC) on 23 April. Herbicide products, Dual (1.5 pt/ac) and Sinbar (3 oz/ac), were applied in the row middles for pre-emergent weed control on 27 April. Muskmelon transplants were approximately 3 weeks old when placed in a "hardening" greenhouse for 7 days prior to being established in the field on 7 May. A starter fertilizer solution was applied at transplant (0.5 lb/50 gal H_2O of 20-20-20 fertilizer, water soluble). Plot size was one row with 10 plants per plot (20 ft long) with in-row spacing of 2 feet and between row spacing of 5 feet. Four replications were used in the muskmelon cultigen trial. Plots with missing plants were replanted approximately 7 days after transplanting to achieve 100% stand, in most cases. Drip irrigation was utilized (NETAFIM, 12 inch spacing, 0.24 gal/hr; NETAFIM, Tel Aviv, Israel) throughout the growing season. Fertigation, using a 4-0-8 liquid fertilizer, was initiated 12 days after planting and applied weekly. The first application of liquid fertilizer (1 gal) was applied through the drip tape on 19 May and the last application (1 gal) 28 July. In this trial fertilizer was either applied preplant or through fertigation. Total amount of fertilizer applied through fertigation during the growing season was 41.4 lb N and 82.8 lb K_2O. The total amount of fertilizer applied for the entire growing season was 101.4 lb/ac N, 60 lb/ac P_2O_5, and 202.8 lb/ac K_2O.

Insecticides were applied every 7 to 10 days as a preventative measure beginning 22 May and again on the following dates: 29 May 2015; 12 and 26 June 2015; 2, 11, 17 and 26 July 2015. The following products were alternated during consecutive spray applications to avoid insect and mite resistance: Permethrin, Asana, Sniper, Venom and Coragen. Similarly, the following fungicide products were used; Tenn-Cop, Procure, Gavel, Zanpro, Presidio, Tanos, Pristine, Previcur Flex, Quadris, Manzate, Kocide and Ridomil Gold; and applied on the following dates; 12 and 26 June 2015; 2, 11, 17 and 26 July 2015.

There were a total of 13 harvests for the muskmelon trial. The first harvest was 2 July 2015 and the thirteenth harvest was 31 July 2015. Harvests were made three times per week on Monday, Wednesday, and Friday. Each fruit was harvested when ripe and weighed. Evaluations of each melon entry included yield, fruit size, production earliness, soluble solids (using a digital refractometer), fruit shape and size, exterior and interior descriptions (rind, length/width ratio, and flesh color), and interior flesh firmness. Flesh firmness was measured (recorded in pounds) by using a Penetrometer FT 011 with a 5/16" plunger tip, (QA Supplies LLC, Norfolk, Va.). Melon samples were obtained by cutting the center of the fruit, lengthwise, from the fruit's stem end to blossom end. Pressure measurements were then taken between the cavity and rind of the fruit on each half of the cut fruit. The reported measures on flesh firmness are an average of the two sample areas from five fruit per plot (10 total fruit halves were measured for flesh firmness per plot). Most of the quality measurements were taken when the melons became ripe between the second and seventh harvests.

The field and growing conditions throughout the harvest period were fairly typical for North Carolina. There was regular rainfall throughout the month of June and parts of July, as well as, optimal ambient temperatures that allowed for good plant growth and fruit set within all the cultigen plots.

Results

Some of the highest, early yielding entries which exceeded over 500 cwt in the first three harvests were Athena, Avatar, NUN 26367 and SV5196MF (Table 1). Based on fruit numbers, the highest, early yielding melon entries which exceeded 7500 fruit per acre included 34-741, 34-753, Athena, Napoli, and SV5196MF (Table 2). The highest percentage of fruit produced from the early yielding entries fell into the 3 to 7 pound fruit range, the most desirable marketable size category for muskmelons (Tables 3&4). The highest yielding mid-season (harvests 4 to 8) entries included Caribbean Gold, El Gordo, Dura-West and Re-Start (Tables 5&6). Most fruit produced from these entries were between 3 to 7 pounds; however, an exception to this included El Gordo which had

nearly 90% of its fruit size over 9 pounds. Fruits this size would be too large for most growers producing muskmelons in North Carolina and likely most other U.S. shipping producing areas (Tables 7&8). Some of the latest yielding entries (harvests 9 to 12) were Diva and Restart (Tables 9&10). Diva produced fruit that averaged 6.5 pounds and Restart produced fruit that averaged 4.9 pounds (Table 9). The highest yielding entries across the entire production season in terms of tonnage (>800 cwt) were Atlantis, Avatar, Diva, Infinite Gold, Maxi-East, NUN 26367, and Sweet East (Table 13). The greatest number of fruits produced over the entire production season were Banzai and Florida (Table 14). These entries produced the lowest average fruit weight of all the cultivars or advanced lines evaluated weighing about 2.5 pounds per fruit (Table 13). El Gordo produced extremely large fruits with average sized fruit weighing in excess of 12 pounds. Other mid-season cultivars included Florida, Infinite Gold, and Timeless Gold (Table 17).

As far as quality of the fruit (Table 18), some of the sweetest entries which averaged 14.0 or more soluble solids included 34-741, Banzai, and Florida. The sweetest entry that far exceeded all other entries was Caribbean King at 15.9 soluble solids. Some of the firmest flesh entries were 34-741, Banzai, Caribbean Gold, Florida, and Dura-West. Both Banzai and Florida had the darkest orange flesh color.

Many of the new entries showed excellent potential for yield and quality in North Carolina's growing environment. Some of the promising new entries included 34-741, 34-742, Dura-West, SV5196, and Sweet East. Other cultivars that have been available for a longer period of time that yielded well with good quality fruit included Athena, Atlantis, Caribbean Gold, Caribbean King, Banzai, Florida, Napoli, Infinite Gold, and Timeless Gold.

The melon industry has been in transition the past several years and there are new melon categories. Traditional categories are western shippers and eastern melons. Today, there are Italian or Tuscan melons, and Extended Shelf Life types, many of which are being grown and sold in North Carolina.

Financial Support

In addition to the seed companies, this program has been supported by the College of Life & Agricultural Sciences, the North Carolina Agricultural Research Service, and the North Carolina Cooperative Extension Service.

Figure 1. 2015 Eastern Melon Pictures

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Table 1. Muskmelon cultigen trial yields, **Cumulative** fruit weight, (x 100), per acre for **early[1] season** harvests 1 - 3. **Kinston, NC, 2015.**

	Fruit size category				Cumulative	Avg.
Cultivar	< 3 lb	3-7 lb	7.1 - 9 lb	> 9 lb	Totals [2]	Wt. [3]
34-741	6.1	364.5	0.0	0.0	370.5	4.7
34-742	4.7	425.7	15.5	0.0	445.8	5.3
Athena	5.4	402.6	81.2	21.2	510.5	5.8
Atlantis	2.6	190.6	77.0	44.0	314.1	6.9
Avatar	0.0	110.6	108.9	294.4	513.9	8.8
Banzai	61.9	10.4	0.0	0.0	72.3	2.5
Caribbean Gold	2.4	244.7	0.0	0.0	247.1	5.1
Caribbean King	2.9	403.9	253.7	0.0	432.2	5.2
Diva	- -	- -	- -	- -	- -	- -
El Gordo	0.0	0.0	9.6	134.5	144.4	12.0
Florida	45.4	4.0	0.0	0.0	49.4	2.1
Infinite Gold	0.0	62.6	16.2	0.0	78.8	6.0
Maxi-East	0.0	133.4	79.2	44.2	256.7	7.0
Napoli	0.0	429.3	0.0	0.0	429.3	4.9
DuraWest	0.0	64.1	16.2	0.0	80.3	5.9
NUN 26367	0.0	236.1	200.5	65.3	501.9	6.8
Re-Start	- -	- -	- -	- -	- -	- -
SV5196MF	0.0	391.9	101.3	22.8	515.9	5.7
Sweet East	2.1	203.3	225.9	115.9	547.1	7.3
Timeless Gold	0.0	128.1	0.0	0.0	128.1	5.0
Average	7.4	211.4	65.8	41.2	313.2	5.9
LSD (0.05)	**19.1**	**123.9**	**93.5**	**86.0**	**121.4**	**- -**

[1] Early harvests (1-3) : 1 - 8 July (55 - 59 days after planting).

[2] Cumulative total includes all fruit size categories.

[3] Average fruit weights were determined using total cumulative weights and numbers from respective harvests.

Table 2. Muskmelon cultigen trial yields, **Cumulative** fruit number per acre for **early**[1] **season** harvests 1 - 3. **Kinston, NC, 2015.**

	Fruit size category				Cumulative
Cultivar	**< 3 lb**	**3-7 lb**	**7.1 - 9 lb**	**> 9 lb**	**Totals** [2]
34-741	218	7623	0	0	7841
34-742	218	8059	218	0	8494
Athena	218	7296	1089	218	8821
Atlantis	109	3267	980	436	4792
Avatar	0	1851	1307	2723	5881
Banzai	2614	327	0	0	2940
Caribbean Gold	109	4901	0	0	5009
Caribbean King	109	7950	327	0	8385
Diva	- -	- -	- -	- -	- -
El Gordo	0	0	109	1089	1198
Florida	2287	109	0	0	2396
Infinite Gold	0	1089	218	0	1307
Maxi-East	0	2287	980	436	3703
Napoli	0	8712	0	0	8712
DuraWest	0	1089	218	0	1307
NUN 26367	0	4247	2505	653	7405
Re-Start	- -	- -	- -	- -	- -
SV5196MF	0	7732	1307	218	9257
Sweet East	109	3485	2831	1198	7623
Timeless Gold	0	2614	0	0	2614
Average	333	4035	672	387	5427
LSD (0.05)	**992**	**2400**	**1180**	**842**	**2302**

[1] Early harvests (1-3) : 1 - 8 July (55 - 59 days after planting).

[2] Cumulative total includes all fruit size categories.

[**] Each number for fruit size category and cumulative total is rounded to the nearest whole number. [**]

Table 3. Muskmelon cultigen trial yields; **Percent[1] of fruit weight** per indicated size category - **Early harvests**. **Kinston, NC, 2015.**

	Fruit size category			
Cultivar	**< 3 lb**	**3-7 lb**	**7.1 - 9 lb**	**> 9 lb**
34-741	2	98	0	0
34-742	1	95	3	0
Athena	1	79	16	4
Atlantis	1	61	25	14
Avatar	0	22	21	57
Banzai	86	14	0	0
Caribbean Gold	1	99	0	0
Caribbean King	1	93	59	0
Diva	- -	- -	- -	- -
El Gordo	0	0	7	93
Florida	92	8	0	0
Infinite Gold	0	79	21	0
Maxi-East	0	52	31	17
Napoli	0	100	0	0
DuraWest	0	80	20	0
NUN 26367	0	47	40	13
Re-Start	- -	- -	- -	- -
SV5196MF	0	76	20	4
Sweet East	0	37	41	21
Timeless Gold	0	100	0	0
Average	10	63	17	12

[1] Percentages for each fruit size category for each cultivar were rounded to the nearest whole number.

Table 4. Muskmelon cultigen trial yields; **Percent[1] of fruit number** per indicated size category - **Early harvests**. **Kinston, NC, 2015.**

	Fruit size category			
Cultivar	**< 3 lb**	**3-7 lb**	**7.1 - 9 lb**	**> 9 lb**
34-741	3	97	0	0
34-742	3	95	3	0
Athena	2	83	12	2
Atlantis	2	68	20	9
Avatar	0	31	22	46
Banzai	89	11	0	0
Caribbean Gold	2	98	0	0
Caribbean King	1	95	4	0
Diva	- -	- -	- -	- -
El Gordo	0	0	9	91
Florida	95	5	0	0
Infinite Gold	0	83	17	0
Maxi-East	0	62	26	12
Napoli	0	100	0	0
DuraWest	0	83	17	0
NUN 26367	0	57	34	9
Re-Start	- -	- -	- -	- -
SV5196MF	0	84	14	2
Sweet East	1	46	37	16
Timeless Gold	0	100	0	0
Average	11	67	12	10

[1] Percentages for each fruit size category for each cultivar were rounded to the nearest whole number.

Table 5. Muskmelon cultigen trial yields, **Cumulative** fruit weight, (x 100), per acre for **mid**[1] **season** harvests 4 - 8. **Kinston, NC, 2015.**

Cultivar	Fruit size category				Cumulative Totals [2]	Avg. Wt. [3]
	< 3 lb	3-7 lb	7.1 - 9 lb	> 9 lb		
34-741	0.0	149.5	16.7	0.0	166.2	5.3
34-742	0.0	124.9	50.5	0.0	175.4	6.0
Athena	2.3	149.5	65.3	10.6	227.7	5.9
Atlantis	2.8	252.5	187.4	20.7	463.5	6.4
Avatar	2.7	40.3	70.2	187.4	300.7	8.9
Banzai	240.6	49.3	0.0	0.0	289.9	2.4
Caribbean Gold	15.6	377.2	0.0	0.0	392.8	4.8
Caribbean King	0.0	140.5	31.9	0.0	172.4	5.7
Diva	0.0	175.6	116.7	41.8	334.1	6.8
El Gordo	0.0	37.9	62.9	761.2	862.1	12.0
Florida	281.7	50.0	0.0	0.0	331.7	2.6
Infinite Gold	2.5	602.3	82.1	0.0	686.9	5.6
Maxi-East	0.0	123.3	197.7	190.6	511.5	7.9
Napoli	12.7	206.5	0.0	0.0	219.2	4.7
DuraWest	2.4	415.5	195.3	10.1	623.2	6.1
NUN 26367	1.5	137.8	157.5	20.4	317.1	6.8
Re-Start	0.0	379.4	0.0	0.0	379.4	5.2
SV5196MF	3.2	54.7	8.6	0.0	66.4	5.7
Sweet East	9.8	138.7	50.9	43.2	242.6	6.1
Timeless Gold	2.9	512.1	8.6	0.0	523.6	5.1
Average	29.0	205.9	65.1	64.3	364.3	6.0
LSD (0.05)	**18.0**	**131.1**	**64.8**	**114.9**	**157.5**	**1.0**

[1] Mid harvests (4-8) : 10 July - 20 July (68 - 78 days after planting).

[2] Cumulative total includes all fruit size categories.

[3] Average fruit weights were determined using total cumulative weights and numbers from respective harvests.

Table 6. Muskmelon cultigen trial yields, **Cumulative** fruit number per acre for **mid**[1] **season** harvests 4 - 8. **Kinston, NC, 2015.**

	Fruit size category				Cumulative
Cultivar	**< 3 lb**	**3-7 lb**	**7.1 - 9 lb**	**> 9 lb**	**Totals** [2]
34-741	0	2940	218	0	3158
34-742	0	2287	653	0	2940
Athena	109	2831	871	109	3920
Atlantis	109	4465	2396	218	7187
Avatar	109	871	871	1634	3485
Banzai	10563	1525	0	0	12088
Caribbean Gold	653	7514	0	0	8168
Caribbean King	0	2614	436	0	3049
Diva	0	3267	1525	436	5227
El Gordo	0	762	762	5663	7187
Florida	11326	1525	0	0	12850
Infinite Gold	109	10999	1089	0	12197
Maxi-East	0	2178	2505	1851	6534
Napoli	545	4356	0	0	4901
DuraWest	109	7514	2505	109	10237
NUN 26367	109	2396	1960	218	4683
Re-Start	0	7514	0	0	7514
SV5196MF	109	1089	109	0	1307
Sweet East	436	2396	653	436	3920
Timeless Gold	109	10019	109	0	10237
Average	1220	3953	833	534	6539
LSD (0.05)	**965**	**2596**	**837**	**880**	**2840**

[1] Mid harvests (4-8) : 10 July - 20 July (68 - 78 days after planting).

[2] Cumulative total includes all fruit size categories.

[**] Each number for fruit size category and cumulative total is rounded to the nearest whole number. [**]

Table 7. Muskmelon cultigen trial yields; **Percent[1] of fruit weight** per indicated size category - **Mid Season harvests**. **Kinston, NC, 2015.**

	Fruit size category			
Cultivar	**< 3 lb**	**3-7 lb**	**7.1 - 9 lb**	**> 9 lb**
34-741	0	90	10	0
34-742	0	71	29	0
Athena	1	66	29	5
Atlantis	1	54	40	4
Avatar	1	13	23	62
Banzai	83	17	0	0
Caribbean Gold	4	96	0	0
Caribbean King	0	81	19	0
Diva	0	53	35	13
El Gordo	0	4	7	88
Florida	85	15	0	0
Infinite Gold	0	88	12	0
Maxi-East	0	24	39	37
Napoli	6	94	0	0
DuraWest	0	67	31	2
NUN 26367	0	43	50	6
Re-Start	0	100	0	0
SV5196MF	5	82	13	0
Sweet East	4	57	21	18
Timeless Gold	1	98	2	0
Average	10	61	18	12

[1] Percentages for each fruit size category for each cultivar were rounded to the nearest whole number.

Table 8. Muskmelon cultigen trial yields; **Percent[1] fruit number** per indicated size category - **Mid Season harvests**. **Kinston, NC, 2015.**

	Fruit size category			
Cultivar	**< 3 lb**	**3-7 lb**	**7.1 - 9 lb**	**> 9 lb**
34-741	0	93	7	0
34-742	0	78	22	0
Athena	3	72	22	3
Atlantis	2	62	33	3
Avatar	3	25	25	47
Banzai	87	13	0	0
Caribbean Gold	8	92	0	0
Caribbean King	0	86	14	0
Diva	0	63	29	8
El Gordo	0	11	11	79
Florida	88	12	0	0
Infinite Gold	1	90	9	0
Maxi-East	0	33	38	28
Napoli	11	89	0	0
DuraWest	1	73	24	1
NUN 26367	2	51	42	5
Re-Start	0	100	0	0
SV5196MF	8	83	8	0
Sweet East	11	61	17	11
Timeless Gold	1	98	1	0
Average	11	64	15	9

[1] Percentages for each fruit size category for each cultivar were rounded to the nearest whole number.

Table 9. Muskmelon cultigen trial yields, **Cumulative** fruit weight, (x 100), per acre for **late**[1] **season** harvests 9 - 12. **Kinston, NC, 2015.**

	Fruit size category				Cumulative	Avg.
Cultivar	< 3 lb	3-7 lb	7.1 - 9 lb	> 9 lb	Totals [2]	Wt. [3]
34-741	2.9	117.8	8.3	27.9	156.9	6.0
34-742	3.2	123.6	26.1	0.0	152.9	5.7
Athena	7.8	16.8	7.7	0.0	32.3	3.7
Atlantis	2.7	33.7	25.9	9.9	72.2	5.2
Avatar	1.5	13.8	17.9	23.1	56.4	7.2
Banzai	102.1	43.6	0.0	0.0	145.7	2.6
Caribbean Gold	0.0	79.8	0.0	0.0	79.8	5.0
Caribbean King	0.0	18.3	7.7	10.7	36.7	6.5
Diva	0.0	321.7	172.1	51.1	544.8	6.5
El Gordo	0.0	7.4	0.0	168.4	175.8	12.8
Florida	90.6	66.8	0.0	0.0	157.4	2.7
Infinite Gold	5.9	53.5	15.8	0.0	75.3	4.9
Maxi-East	0.0	11.1	25.1	20.6	56.9	7.9
Napoli	2.9	92.0	0.0	0.0	94.9	4.4
DuraWest	5.9	59.9	0.0	0.0	65.9	4.4
NUN 26367	0.0	18.2	0.0	0.0	18.2	5.6
Re-Start	5.0	262.0	31.8	0.0	298.8	4.9
SV5196MF	0.0	4.0	8.6	11.8	24.4	8.3
Sweet East	0.0	22.9	17.2	0.0	40.2	6.5
Timeless Gold	0.0	37.7	26.1	10.2	74.1	6.2
Average	11.5	70.2	19.5	16.7	82.6	5.8
LSD (0.05)	**18.2**	**81.9**	**71.6**	**114.7**	**126.8**	**- -**

[1] Late harvests (9-12) : 22 - 29 July (80 - 87 days after planting).

[2] Cumulative total includes all fruit size categories.

[3] Average fruit weights were determined using total cumulative weights and numbers from respective harvests.

Table 10. Muskmelon cultigen trial yields, **Cumulative** fruit number per acre for **late**[1] **season** harvests 9 - 12. **Kinston, NC, 2015.**

	Fruit size category				Cumulative
Cultivar	**< 3 lb**	**3-7 lb**	**7.1 - 9 lb**	**> 9 lb**	**Totals** [2]
34-741	109	2287	109	218	2723
34-742	109	2287	327	0	2723
Athena	436	327	109	0	871
Atlantis	109	762	327	109	1307
Avatar	109	327	218	218	871
Banzai	4356	1307	0	0	5663
Caribbean Gold	0	1525	0	0	1525
Caribbean King	0	327	109	109	545
Diva	0	5663	2178	545	8385
El Gordo	0	109	0	1089	1198
Florida	3812	1960	0	0	5772
Infinite Gold	218	1089	218	0	1525
Maxi-East	0	218	327	218	762
Napoli	109	2069	0	0	2178
DuraWest	218	1198	0	0	1416
NUN 26367	0	327	0	0	327
Re-Start	218	5227	436	0	5881
SV5196MF	0	109	109	109	327
Sweet East	0	436	218	0	653
Timeless Gold	0	762	327	109	1198
Average	490	1416	250	136	2292
LSD (0.05)	**759**	**1563**	**902**	**809**	**1938**

[1] Late harvests (9-12) : 22 - 29 July (80 - 87 days after planting).

[2] Cumulative total includes all fruit size categories.

[**] Each number for fruit size category and cumulative total is rounded to the nearest whole number. [**]

Table 11. Muskmelon cultigen trial yields; **Percent[1] of fruit weight** per indicated size category - **Late harvests**. **Kinston, NC, 2015.**

	Fruit size category			
Cultivar	**< 3 lb**	**3-7 lb**	**7.1 - 9 lb**	**> 9 lb**
34-741	2	75	5	18
34-742	2	81	17	0
Athena	24	52	24	0
Atlantis	4	47	36	14
Avatar	3	24	32	41
Banzai	70	30	0	0
Caribbean Gold	0	100	0	0
Caribbean King	0	50	21	29
Diva	0	59	32	9
El Gordo	0	4	0	96
Florida	58	42	0	0
Infinite Gold	8	71	21	0
Maxi-East	0	20	44	36
Napoli	3	97	0	0
DuraWest	9	91	0	0
NUN 26367	0	100	0	0
Re-Start	2	88	11	0
SV5196MF	0	16	35	48
Sweet East	0	57	43	0
Timeless Gold	0	51	35	14
Average	9	58	18	15

[1] Percentages for each fruit size category for each cultivar were rounded to the nearest whole number.

Table 12. Muskmelon cultigen trial yields; **Percent[1] fruit number** per indicated size category - **Late harvests**. **Kinston, NC, 2015.**

	Fruit size category			
Cultivar	**< 3 lb**	**3-7 lb**	**7.1 - 9 lb**	**> 9 lb**
34-741	4	84	4	8
34-742	4	84	12	0
Athena	50	38	13	0
Atlantis	8	58	25	8
Avatar	13	38	25	25
Banzai	77	23	0	0
Caribbean Gold	0	100	0	0
Caribbean King	0	60	20	20
Diva	0	68	26	6
El Gordo	0	9	0	91
Florida	66	34	0	0
Infinite Gold	14	71	14	0
Maxi-East	0	29	43	29
Napoli	5	95	0	0
DuraWest	15	85	0	0
NUN 26367	0	100	0	0
Re-Start	4	89	7	0
SV5196MF	0	33	33	33
Sweet East	0	67	33	0
Timeless Gold	0	64	27	9
Average	13	61	14	11

[1] Percentages for each fruit size category for each cultivar were rounded to the nearest whole number.

Table 13. Muskmelon cultigen trial yields[1], **Cumulative** fruit weight, (x 100), per acre across all 12 harvests. **Kinston, NC, 2015.**

	Fruit size category				Cumulative	Avg.
Cultivar	< 3 lb	3-7 lb	7.1 - 9 lb	> 9 lb	Totals [2]	Wt. [3]
34-741	9	632	25	28	693	5.1
34-742	8	674	92	0	774	5.5
Athena	16	569	154	32	770	5.7
Atlantis	8	478	290	75	850	6.4
Avatar	4	165	197	505	871	8.5
Banzai	405	103	0	0	508	2.5
Caribbean Gold	18	702	0	0	720	4.9
Caribbean King	3	563	65	11	641	5.5
Diva	0	497	289	93	879	6.5
El Gordo	0	45	73	1064	1182	12.4
Florida	418	121	0	0	539	2.6
Infinite Gold	9	718	114	0	841	5.6
Maxi-East	0	268	302	255	825	7.6
Napoli	16	728	0	0	743	4.7
DuraWest	8	539	211	10	769	5.9
NUN 26367	2	392	358	86	837	6.8
Re-Start	5	651	32	0	688	5.1
SV5196MF	3	451	111	35	599	5.7
Sweet East	12	365	294	159	830	6.8
Timeless Gold	3	678	35	10	726	5.2
Average	47.3	467.0	132.1	118.2	764.3	5.9
LSD (0.05)	**27.4**	**143.0**	**105.0**	**115.0**	**134.4**	**0.7**

[1] Melons were harvested 3 times per week.

[2] Cumulative total includes all fruit size categories.

[3] Average fruit weights were determined using total cumulative weights and numbers from respective harvests.

Table 14. Muskmelon cultigen trial yields[1], **Cumulative** fruit per acre number across all 12 harvests. **Kinston, NC, 2015.**

	Fruit size category				Cumulative
Cultivar	**< 3 lb**	**3-7 lb**	**7.1 - 9 lb**	**> 9 lb**	**Totals [2]**
34-741	327	12850	327	218	13721
34-742	327	12632	1198	0	14157
Athena	762	10454	2069	327	13613
Atlantis	327	8494	3703	762	13286
Avatar	218	3049	2396	4574	10237
Banzai	17533	3158	0	0	20691
Caribbean Gold	762	13939	0	0	14702
Caribbean King	109	10890	871	109	11979
Diva	0	8930	3703	980	13613
El Gordo	0	871	871	7841	9583
Florida	17424	3594	0	0	21018
Infinite Gold	327	13177	1525	0	15028
Maxi-East	0	4683	3812	2505	10999
Napoli	653	15137	0	0	15791
DuraWest	327	9801	2723	109	12959
NUN 26367	109	6970	4465	871	12415
Re-Start	218	12959	436	0	13613
SV5196MF	109	8930	1416	327	10781
Sweet East	545	6316	3703	1634	12197
Timeless Gold	109	13395	436	109	14048
Average	2009	9011	1683	1018	13722
LSD (0.05)	**1427**	**2896**	**1343**	**1040**	**2656**

[1] Melons were harvested 3 times per week.

[2] Cumulative total includes all fruit size categories.

** Each number for fruit size category and cumulative total is rounded to the nearest whole number. **

Table 15. Muskmelon cultigen trial yields; **Percent[1] of fruit weight** per indicated size category - **Cumulative harvests**. **Kinston, NC, 2015.**

	Fruit size category			
Cultivar	**< 3 lb**	**3-7 lb**	**7.1 - 9 lb**	**> 9 lb**
34-741	1	91	3	4
34-742	1	87	12	0
Athena	2	74	20	4
Atlantis	1	56	34	8
Avatar	0	19	23	58
Banzai	80	20	0	0
Caribbean Gold	2	98	0	0
Caribbean King	0	87	10	2
Diva	0	57	34	10
El Gordo	0	4	6	90
Florida	78	22	0	0
Infinite Gold	1	86	13	0
Maxi-East	0	32	36	32
Napoli	2	98	0	0
DuraWest	1	71	27	1
NUN 26367	0	47	42	10
Re-Start	1	95	4	0
SV5196MF	0	74	20	6
Sweet East	1	44	36	19
Timeless Gold	0	93	5	1
Average	9	63	16	12
LSD (0.05)	**5**	**15**	**13**	**12**

[1] Percentages for each fruit size category for each cultivar were rounded to the nearest whole number.

Table 16. Muskmelon cultigen trial yields; **Percent[1] fruit number** per indicated size category - **Cumulative harvests**. **Kinston, NC, 2015.**

	Fruit size category			
Cultivar	**< 3 lb**	**3-7 lb**	**7.1 - 9 lb**	**> 9 lb**
34-741	3	94	2	2
34-742	2	89	9	0
Athena	5	77	15	3
Atlantis	2	63	28	6
Avatar	2	30	23	45
Banzai	84	16	0	0
Caribbean Gold	5	95	0	0
Caribbean King	1	91	7	1
Diva	0	64	29	7
El Gordo	0	9	9	82
Florida	83	17	0	0
Infinite Gold	2	88	10	0
Maxi-East	0	41	35	24
Napoli	4	96	0	0
DuraWest	2	76	21	1
NUN 26367	0	55	37	7
Re-Start	2	95	3	0
SV5196MF	1	81	15	3
Sweet East	4	52	30	14
Timeless Gold	1	95	4	1
Average	10	66	14	10
LSD (0.05)	**5**	**14**	**12**	**10**

[1] Percentages for each fruit size category for each cultivar were rounded to the nearest whole number.

Table 17. Muskmelon cultigen trial percentage of fruit **number** harvested among varying harvest intervals. **Kinston, NC, 2015.**

		Pecentage harvested among harvest periods		
Cultivar	**Company**	**Early Harvests[1]**	**Mid Harvests[2]**	**Late Harvests[3]**
34-741	Rijk Zwaan	57	23	20
34-742	Rijk Zwaan	60	21	19
Athena	Syngenta	65	29	6
Atlantis	Sakata	36	54	10
Avatar	Sakata	57	34	9
Banzai	Seminis	14	58	27
Caribbean Gold	Rijk Zwaan	34	56	10
Caribbean King	Rijk Zwaan	70	25	5
Diva	Origene	- -	38	62
El Gordo	DP Seeds	13	75	13
Florida	Seminis	11	61	27
Infinite Gold	Sakata	9	81	10
Maxi-East	Bayer Cropscience	34	59	7
Napoli	DP Seeds	55	31	14
DuraWest	Bayer Cropscience	10	79	11
NUN 26367	Bayer Cropscience	60	38	3
Re-Start	Origene	- -	55	43
SV5196MF	Seminis	86	12	3
Sweet East	Bayer Cropscience	62	32	5
Timeless Gold	Sakata	19	73	9
Average		**42**	**46**	**17**

[1] Early harvests (1-3) : 1 - 8 July (55 - 59 days after planting).
[2] Mid harvests (4-8) : 10 July - 20 July (68 - 78 days after planting).
[3] Late harvests (9-12) : 22 - 29 July (80 - 87 days after planting).

Table 18. Eastern muskmelon hybrid cultivar trial. Descriptive characteristics and interior fruit quality. **Kinston, N.C., 2015.**[1]

Cultivar	Company	SS[2]	Sutures[3]	Netting Density[4]	Netting Type[5]	Stem Scar[6]	Stem Splitting[7]	LD[8]	Flesh Color[9]	Flesh Firmness[10]	Cavity[11]	Shape[12]	Foliage Cover[13]
34-741	Rijk Zwaan	14.1	1.5	2.3	2.1	1.8	1.2	1.23	3.0	6.9	2.1	4.4	4.0
34-742	Rijk Zwaan	13.3	1.5	2.0	2.3	2.2	1.6	1.26	3.0	3.6	1.8	4.4	3.6
Athena	Syngenta	12.6	1.5	2.4	2.1	1.7	1.4	1.15	2.6	2.5	2.0	4.4	3.4
Atlantis	Sakata	12.0	1.5	2.2	2.0	1.1	1.5	1.30	3.8	2.9	2.3	4.5	3.0
Avatar	Sakata	12.5	1.5	2.6	2.8	1.9	2.0	1.17	3.5	3.0	2.9	4.0	2.9
Banzai	Seminis	14.2	2.6	2.3	2.4	- -	1.0	1.06	4.3	6.0	1.0	5.0	4.9
Caribbean Gold	Rijk Zwaan	13.8	1.0	2.9	2.9	- -	1.0	1.23	3.3	6.1	1.3	4.8	3.8
Caribbean King	Rijk Zwaan	15.9	1.2	2.6	2.3	- -	1.0	1.15	3.2	4.8	1.3	4.9	4.1
Diva	Origene	11.7	2.6	3.0	3.3	- -	1.0	1.13	2.8	4.4	1.9	4.3	4.9
El Gordo	DP Seeds	11.6	3.0	2.6	3.0	2.5	3.3	1.18	2.5	3.4	2.9	4.4	4.1
Florida	Seminis	14.0	2.6	2.1	2.1	- -	1.0	1.17	4.5	6.5	1.0	4.6	4.8
Infinite Gold	Sakata	12.5	1.3	2.8	2.5	1.3	1.0	1.18	3.0	5.3	1.8	4.9	3.8
Maxi-East	Bayer Cropscience	12.9	1.9	2.6	2.8	2.1	2.1	1.18	3.0	3.7	2.0	3.8	3.4
Napoli	DP Seeds	13.0	2.5	2.6	2.5	2.0	3.1	1.26	3.3	3.0	1.8	4.9	3.5
DuraWest	Bayer Cropscience	13.0	1.1	2.6	2.8	1.4	1.0	1.25	3.4	6.1	1.9	4.9	4.0
NUN 26367	Bayer Cropscience	12.6	1.3	2.9	2.8	1.8	1.1	1.19	3.5	3.9	1.4	5.0	3.1
Re-Start	Origene	11.9	1.3	2.9	2.4	- -	1.0	1.28	2.7	6.3	1.1	5.0	4.1
SV5196MF	Seminis	13.4	1.5	2.4	2.6	1.8	1.4	1.15	3.0	4.3	1.9	4.5	3.4
Sweet East	Bayer Cropscience	12.3	1.5	2.5	2.5	2.1	1.9	1.29	2.9	3.6	1.9	4.5	3.6
Timeless Gold	Sakata	12.7	1.4	2.8	3.0	- -	1.1	1.18	2.9	5.5	1.4	4.6	4.0
Average		13.0	1.7	2.5	2.5	1.8	1.5	1.20	3.2	4.6	1.8	4.6	3.8
LSD (0.05)		**1.1**	**0.2**	**0.4**	**0.4**	**0.6**	**0.5**	**0.04**	**0.6**	**0.8**	**0.5**	**0.6**	**0.8**

[1] Most measurements were obtained from fruits in harvests 2-6.

[2] SS = Indicates sweetness, average of 5 melons per replication (20 total).

[3] Sutures: 1 = none, 3=moderate, 5 = deep.

[4] Netting Density: 1=none, 5=dense.

[5] Netting Type: 1 = fine, 5 =thick ropy.

[6] Stem Scar: 1 = small, 3=medium, 5 = large (unattractive).

[7] Stem Splitting: 1= none, 5 = extensive (unmarketable).

[8] LD = Length and diameter ratio, average of 5 melons per replication.

[9] Flesh color: 1 = pale orange, 5 = deep orange.

[10] Flesh Firmness is represented in pounds.

[11] Cavity: 1=small, 2=medium, 3=large

[12] Shape: 1=all fruit are various, 3 = majority are the same, 5 = all fruit same shape.

[13] Foliage cover: 1 = no fruit covered, 5 = all fruit covered (lush).