

Spring 2007 Commercial Vegetable Variety Trials

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*Names of chemicals are mentioned only for describing the production practices used.
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Authors

Randy Akridge

Superintendent
Brewton Agriculture Research Unit
P.O. Box 217
Brewton, AL 36427
(251) 867-3139

Anthony Bateman

Technician
University Of Georgia
PO Box 748 Moore Hwy
Tifton, GA 31793-0748
(229) 386-3355
batema@tifton.uga.edu

George Boyhan

Assistant Professor and Extension Specialist
Georgia Cooperative Extension Service
Statesboro, Georgia
(912) 386-3442

Jason Burkett

Superintendent
E.V. Smith Research Center
(334) 727-6159

Arnold Caylor

Superintendent
North Alabama Horticulture Research Center
(256) 734-5820

Shane Curry

University Of Georgia
Montgomery Co. Agent
PO Box 276
Mount Vernon, GA 30445
(912) 583-2240
(912) 583-2744
dscurry@uga.edu

Mike Dollar

Extension Agent, Evans County
201 Freeman Street Suite 9
Claxton, GA 30417

Randell Hill

Research Station Superintendent
8163 Hwy 178
Lyons, GA 30436

Joe Kemble

Associate Professor and Extension Vegetable Specialist
Department of Horticulture
Auburn University, AL
(334) 844-3050
kemblijm@auburn.edu

Cliff Riner

Extension Agent, Tattall County
P.O. Box 58
Reidsville, GA 30453

Denny Thigpen

Farm Technician
8163 Hwy 178
Lyons, GA 30436
(912) 565-7822
(912) 565-7618
dthigpen@uga.edu

Reid L. Torrence

County Extension Coordinator
Tattall County Extension Office
P.O. Box 58
Reidsville, GA 30453

Edgar Vinson

Research Associate III
Department of Horticulture
Auburn University, AL
(334) 844-8494
vinsoed@auburn.edu

Introduction: Tips for Interpreting Vegetable Varieties Performance Results

Edgar Vinson and Joe Kemble

The spring 2007 variety trials regional bulletin includes research results from Auburn University and the University of Georgia. The information provided by this report must be studied carefully in order to make the best selections possible. Although yield is a good indicator of varietal performance, other information must be studied. The following provides a few tips to help producers adequately interpret results in this report.

Open pollinated or hybrid varieties. In general, hybrids (also referred to as F_1) are earlier and produce a more uniform crop. They have improved disease, pest, or virus tolerance/resistance. F_1 varieties are often more expensive than open pollinated varieties (OP), and seeds cannot be collected from one crop to plant the next. Despite the advantages hybrids offer, OP are still often planted in Alabama. Selecting a hybrid variety is the first step toward earliness and quality.

Yield potential. Yields reported in variety trial results are extrapolated from small plots. Depending on the vegetable crop, plot sizes range between 100 to 500 square feet. Yields per acre are estimated by multiplying plot yields by corrective factors ranging from 100 to 1,000. Small errors are thus amplified, and estimated yields per acre may not be realistic. Therefore, locations cannot be compared by just looking at the range of yields actually reported. However, the relative differences in performance among varieties are realistic, and can be used to identify best-performing varieties.

Statistical interpretation. The coefficient of determination (R^2), coefficient of variation (CV) and least significant difference (LSD, 5%) are reported for each test. These numbers are helpful in separating the differences due to small plots (sampling error) and true (but unknown) differences among entries.

R^2 values range between 0 and 1. Values close to 1 suggest that the test was conducted under good conditions and most of the variability observed was mainly due to the effect of variety and replication. Random, uncontrolled errors were of lesser importance. CV is an expression of yield

variability relative to yield mean. Low CVs (under 20%) are desirable but are not always achieved.

There must be a minimum yield difference between two varieties before one can statistically conclude that one variety actually performs better than another. This is known as the least significant difference (LSD). When the difference in yield is less than the LSD value, one cannot conclude that there is any real difference between two varieties. For example, in the seedless watermelon trial presented in this issue conducted at the North Alabama Horticulture Research Center, Nun 6032WM yielded 52,423 pounds per acre, while 'Revolution' and 'Boston' yielded 43,880 and 33,816 pounds per acre, respectively. Since there was less than a 18,152 difference between 'Revolution' and 'Boston,' there is no statistical difference between these two varieties. However, the yield difference between Nun 6032WM and 'Boston' was 18,607, indicating that there is a real difference between these two varieties. From a practical point of view, producers should place the most importance on LSD values when interpreting results.

Testing conditions. AU vegetable variety trials are conducted under standard, recommended commercial production practices. If the cropping system to be used is different from that used in the trials, the results of the trials may not apply. Information on soil type (Table 1), planting dates, fertilizer rates, and detailed spray schedule are provided to help producers compare their own practices to the standard one used in the trials and make relevant adjustments.

Ratings of trials. At each location, variety trials were rated on a 1 to 5 scale, based on weather conditions, fertilization, irrigation, pest pressure and overall performance (Table 2). Results from trials with ratings of 2 and under are not reported. These numbers may be used to interpret differences in performance from location to location. The overall rating may be used to give more importance to the results of variety performance under good growing conditions.

Where to get seeds. Because seeds are alive, their performance and germination rate depends on how old they are, where and how they were collected, and how they have been handled and stored. It is always preferable to get certified seeds from a reputable source, such as the ones listed in Seed Sources, page 24.

Several factors other than yield have to be considered when choosing a vegetable variety from a variety trial report. The main factors are type, resistance and tolerance to diseases, earliness, and of course, availabil-

ity and cost of seeds. It is always better to try two to three varieties on a small scale before making a large planting of a single variety.

Vegetable trials on the Web. For more vegetable variety information be sure to visit our Web page at http://www.aces.edu/dept/com_veg/veg_trial/vegetabl.htm. Our Web site will provide a description of variety types, a ratings system, and information about participating seed companies.

Table 1. Soil Types at the Location of the Trial

Location	Water holding Capacity (in/in)	Soil Type
Gulf Coast Research and Extension Center (Fairhope)	0.09-0.19	Malbis fine sandy loam
Brewton Agricultural Research Unit (Brewton)	0.12-0.14	Benndale fine sandy loam
Wiregrass Research and Extension Center (Headland)	0.14-0.15	Dothan sandy loam
Lower Coastal Plain Research and Extension (Camden)	0.13-0.15	Forkland fine sandy loam
EV Smith Research Center, Horticultural Unit (Shorter)	0.15-0.17	Norfolk-orangeburg loamy sand
Chilton Area Horticultural Substation (Clanton)	0.13-0.15	Luvernue sandy loam
Upper Coastal Plain Research and Extension Center (Winfield)	0.13-0.20	Savannah loam
North Alabama Horticultural Research Center (Cullman)	0.16-0.20	Hartsells-Albertville fine sandy loam
Sand Mountain Research and Extension Center (Crossville)	0.16-0.18	Wynnvilleville fine sandy loam

Table 2. Description of Ratings

Rating	Weather	Fertilizer	Irrigation	Pests	Overall
5	Very Good	Very Good	Very Good	None	Excellent
4	Favorable	Good	Good	Light	Good
3	Acceptable	Acceptable	Acceptable	Tolerable	Acceptable
2	Adverse	Low	Low	Adverse	Questionable
1	Destructive	Very Low	Insufficient	Destructive	Useless



Cantaloupe Varieties Compared in North Alabama



Joe Kemble, Edgar Vinson, and Arnold Caylor

A small melon trial was conducted at the North Alabama Horticulture Research Center (NAHRC) in Cullman, Alabama (Tables 1 and 2).

Soils were fertilized according to the recommendations of the Auburn University Soil Testing Laboratory. For current recommendations for pest and weed control in vegetable production in Alabama, consult your county extension agent or go online to <http://www.aces.edu/counties/>.

Cantaloupe and honeydew melon varieties were direct-seeded on May 13 into 30-foot rows with 6 feet between rows and a within row spacing of 2 feet. Drip irrigation and black plastic mulch were used.

Melons were harvested five times at the half slip stage of maturity from August 1 through August 16 (Table 3).

There were few differences found among varieties. In the honeydew category, ‘Sundew’ and ‘Salmon Dew,’ two recently developed varieties, performed as well as ‘Roccio’ and ‘Creme de Menthe’. Individual fruit weight of all

Location	NAHRC
Weather	5
Fertility	5
Irrigation	5
Pests	5
Overall	5

¹ See introduction for description of ratings scales

varieties was similar, which accounts for the similarity in total marketable fruit number. Among the cantaloupe varieties, the new variety ‘Jaipur’ performed as well as the standard variety ‘Athena’.

For commercial production of cantaloupe, a 4- to 6-pound range is desirable. Larger melons are more suited for road side markets. The market standard ‘Athena’ had an average melon weight of 5.97, which is within the

Variety	Type ¹	Seed source	Rind aspect ²	Flesh color ³	Days to harvest	Disease claims ⁴
Aphrodite	F1	Seedway/Novartis	E	O	—	—
Athena	F1	Seedway/Novartis	E	O	80	FW,PM,
Creme de Menthe ⁵	F1	Sieger	HD	G	82	FW
Eclipse	F1	Seminis	E	O	85	FW,PM
Honey Star	F1	Sunseeds	HD	G	85	FW,PM
Jaipur	F1	Seminis	E	O	—	—
Odyssey	F1	Sunseeds	E	O	—	—
Roccio	F1	Sunseeds	HD	G	85	FW,PM
Salmon Dew	F1	Takii	HD	O	—	—
Sundew	F1	Sunseeds	HD	G	—	FW
Wrangler	F1	Hollar	E	O	85	FW,PM

¹ Type: F1 = Hybrid OP = Open Pollenated; ² Rind Aspect: E = Eastern, HD = Honeydew; ³ Flesh color: O = Orange G = Green; ⁴ Disease claims: FW = Fusarium Wilt, PM = Powdery Mildew; ⁵ Not sensitive to sulfur; — = not found, from seed catalog.

recommended range for commercial melons. ‘Aphrodite’ was the largest melon averaging 10.36 pounds per melon.

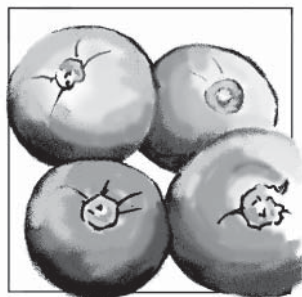
Sweetness was measured at harvest using a hand-held digital refractometer. Cantaloupes and honeydew melons with soluble solids reading below 100 brix do not taste sweet. ‘Wrangler’ and ‘Athena’ had the highest brix reading at 13.70 and 13.37, respectively. Sweetness of ‘Athena’ was similar to all other varieties with the

exception of ‘Aphrodite’. ‘Creme de Menthe’ had brix readings similar to all other honeydew melons.

Most cantaloupe varieties were similar to ‘Athena’ in yield per acre, fruit number per acre, and sugar content. ‘Athena’ was the only variety to have an average fruit weight within the ideal range. Given these similarities, growers may not see a need to change from using ‘Athena’ to using another comparable variety.

Table 3. Yield of Selected Eastern Cantaloupe Varieties

Variety	Total marketable yield <i>lbs/a</i>	Total marketable fruit <i>no/a</i>	Individual fruit weight <i>lbs</i>	Soluble solids <i>(brix)</i>
Sundew	73,280	10,588	6.90	12.95
Roccio	69,427	9,983	6.95	11.28
Creme de Menthe	64,824	9,559	6.77	12.28
Salmon Dew	57,058	9,136	6.26	12.38
Honey Star	51,680	8,047	6.52	11.50
R²	0.62	0.40	0.83	0.50
CV	25	24	11	8
LSD	19,066	3,324	1.10	1.57
Odyssey	65,618	8,833	7.37	12.33
Eclipse	61,470	9,196	6.67	11.78
Aphrodite	58,295	7,442	7.84	11.40
Wrangler	49,306	13,734	3.60	13.70
Athena	48,516	8,107	5.97	13.37
Jaipur	39,425	5,687	7.34	12.17
R²	0.40	0.22	0.41	0.30
CV	19	19	5	9
LSD	18,392	2,768	0.53	1.61



New Tomato Varieties, New Standards



**Joe Kemble, Edgar Vinson, Randy Akridge,
and Arnold Caylor**

A spring tomato variety trial was conducted at the Brewton Agricultural Research Unit (BARU) in Brewton, Alabama, and the North Alabama Horticulture Research Center (NAHRC) in Cullman, Alabama (Tables 1 and 2). Six-week-old tomato transplants were planted on April 30 at NAHRC and on May 10 at BARU. At both locations, transplants were set into 20-foot-long plots, at a within row spacing of 1.5 feet on white plastic mulch. Drip irrigation was used.

Soils were fertilized according to the recommendations of the Auburn University Soil Testing Laboratory. At BARU, plants received weekly injections of either potassium nitrate or calcium nitrate (at a rate of 10 to 20 pounds per acre) from May 14 through July 9. At NAHRC pesticides were applied weekly from May 17 through July 19. At NAHRC, plants received weekly injections of ammonium nitrate at a rate of 10 pounds per acre. No pesticide applications were required. For current recommendations for pest and weed control in vegetable production in Alabama, consult your county extension agent or go online to <http://www.aces.edu/counties/>.

Tomatoes were harvested, weighed, and graded weekly between July 18 and August 7 at BARU and between July

**Table 1. Ratings of the 2007
Tomato Variety Trial¹**

Location	BARU	NAHRC
Weather	5	4
Fertility	5	5
Irrigation	5	5
Pests	5	4
Overall	5	5

¹ See introduction for description of ratings scales

8 and August 13 at NAHRC. Grades and corresponding fruit diameters (D) of fresh market tomato were adapted from the Tomato Grader's Guide (Circular ANR 643 from the Alabama Cooperative Extension System) and were Jumbo (D greater than 3.5 inch), extra-large (D greater than 2.9 inch), large (D greater than 2.5 inch) and medium (D greater than 2.3 inch). Marketable yield was the sum of jumbo, extra-large, large and medium grades (Table 3).

At BARU, all varieties resistant to tomato spotted wilt virus (TSWV) performed as well as the standard variety 'Florida 47' (Table 3). As spread of TSWV increases, planting resistant varieties is becoming more important. 'Red Defender', a new TSWV-resistant va-

Table 2. Seed Source, Fruit Characteristics, and Relative Earliness of Selected Tomato Varieties

Variety	Type ¹	Seed source	Plant habit ²	Fruit color	Days to harvest	Disease claims ³	Years evaluated
Amelia	F1/FM	Harris Moran	Det	Red	80	**FW,TSWV,VW	03-07
Bella Rosa	F1/FM	Sakata	Det	Red	74	*FW,TSWV,VW	07
BHN 602	F1/FM	BHN	Det	Red	77	**FW,TSWV,VW	07
BHN 640	F1/FM	BHN	Det	Red	75	**FW,TSWV,VW	03-07
Crista	F1/FM	Harris Moran	Det	Red	74	**FW,NE,TSWV,VW	06,07
Florida 47	F1/FM	Seminis	Det	Red	75	ASC,*FW,St,TY,VW	97-99,02-07
NC 056	F1/FM	NC State	Det	Red	—	TSWV	07
NC 05137	F1/FM	NC State	Det	Red	—	TSWV	07
NC 05232	F1/FM	NC State	Det	Red	—	TSWV	07
Phoenix	F1/FM	Seminis	Det	Red	—	ASC,*FW,St,VW	06,07
Red Defender	F1/FM	Seedway	Det	Red	—	TSWV	07
Soraya	F1/FM	Rogers	Det.	Red	—	FCR,**FW, St	05-07
Talladega	F1/FM	Seedway	Det.	Red	76	*FW,St,TSWV,VW	07
OFRI	F1/FM	Sieger	Det.	Red	—	ASC,*FW,St,VW	07

¹Type: F1 = Hybrid, FM = Fresh market; ²Plant habit: Det. = Determinate; ³Disease claims: FCR = Fusarium Crown Rot; FW = Fusarium Wilt; VW = Verticillium Wilt; ASC = Alternaria Stem Canker; St = Stemphylium (grey leaf spot), TSWV = Tomato Spotted Wilt Virus; * = Races 1 and 2; ** = Races 1, 2, and 3; — = not found, from seed catalog.

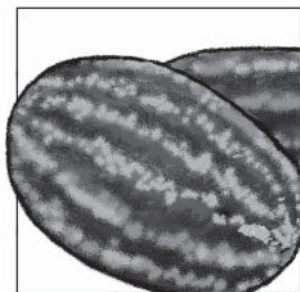
riety, produced yields significantly higher than 'BHN 640', one of the first varieties to exhibit resistance to the virus. The performance of 'OFRI' was lower than all other varieties; this variety is not suited for the southern region of Alabama.

At NAHRC, several advanced experimental varieties were included from North Carolina State University. These varieties performed as well as or better than 'Florida 47' and 'BHN 640'. 'OFRI' performed as well as 'Florida 47' and all other TSWV-resistant varieties and is better suited for the northern region of Alabama.

Table 3. Total Yield of Selected Tomato Varieties

Variety	Total marketable weight lbs/a	Total marketable number no/a	Jumbo number no/a	Jumbo weight lbs/a	Extra large number no/a	Extra large weight lbs/a	Large number no/a	Large weight lbs/a	Medium number no/a	Medium weight lbs/a	Cull weight lbs/a
Brewton Agricultural Research Unit											
Red Defender	30,543	60,258	1,271	1,134	30,674	18,930	18,967	7,979	9,347	2,500	4,537
BHN 602	27,911	50,457	2,178	2,147	29,766	18,790	12,251	5,108	6,262	1,866	6,707
Bella Rosa	27,266	48,188	1,997	1,890	29,766	19,333	11,072	4,548	5,354	1,494	6,943
Phoenix	26,393	47,372	2,541	2,383	26,136	16,419	12,524	5,531	6,171	2,059	6,131
Amelia	25,892	48,370	1,815	1,793	25,229	15,806	14,157	6,042	7,169	2,251	3,700
Florida 47	25,421	49,368	1,694	1,661	25,773	15,683	15,609	6,493	6,716	1,998	4,986
Talladega	24,949	47,099	1,089	1,073	27,225	16,899	13,159	5,615	6,171	1,899	6,577
Crista	24,208	45,284	1,573	1,437	22,415	14,754	13,885	6,078	7,805	2,297	7,022
BHN 640	20,963	41,019	726	679	21,871	13,627	11,344	4,805	7,442	2,192	7,773
Soraya	19,587	37,661	968	852	16,970	11,154	12,524	5,451	7,442	2,342	6,882
OFRI	11,297	21,417	726	686	11,616	7,138	6,171	2,698	3,086	946	12,067
R²	0.65	0.70	0.30	0.31	0.61	0.60	0.60	0.60	0.44	0.40	0.64
CV	17	16	67	67	21	21	22	23	29	30	27
LSD	6,049	10,121	1,554	1,475	7,376	4,737	4,121	1,778	2,811	854	2,602
North Alabama Horticulture Research Center											
NC 05137	88,062	69,918	•	•	16,973	2,710	32,612	34,725	20,333	50,628	28,335
Crista	82,019	72,052	•	•	21,998	7,313	30,683	36,837	19,371	37,869	24,407
Amelia	73,360	87,607	•	•	15,663	5,582	40,519	33,020	31,426	34,757	28,554
BHN 602	72,587	79,062	•	•	13,813	3,520	34,908	31,061	30,341	38,006	30,463
OFRI	70,917	73,181	•	•	13,865	2,530	33,465	32,668	25,851	36,351	29,594
NC 05232	64,284	56,136	•	•	16,193	2,022	25,440	28,125	14,503	34,137	26,731
Red Defender	62,594	65,546	•	•	11,241	2,634	30,212	24,140	24,093	35,819	26,445
Soraya	61,471	63,506	•	•	14,486	2,713	31,754	28,282	17,265	30,477	34,030
Phoenix	57,609	52,872	•	•	12,356	1,817	23,257	21,758	17,260	34,488	35,316
NC 056	55,316	48,228	•	•	14,991	2,288	23,708	25,867	9,5302	7,161	17,462
BHN 640	52,545	70,796	•	•	6,398	2,040	28,857	20,804	35,541	30,212	27,246
Talladega	48,401	50,778	•	•	9,891	2,589	23,845	22,051	17,042	23,760	21,402
Florida 47	47,650	46,437	•	•	7,759	1,902	21,675	16,344	17,003	29,404	22,107
Bella Rosa	40,223	47,760	•	•	7,990	3,144	22,157	18,221	17,614	18,858	20,125
R²	0.35	0.34	•	•	0.55	0.33	0.33	0.30	0.42	0.40	0.40
CV	33	32	•	•	51	50	31	43	44	31	23
LSD	29,383	28,768	•	•	2,261	9,426	12,618	16,385	13,431	14,592	12,757

• = information not available



Seedless Watermelon Trial Continues in North Alabama



Joe Kemble, Edgar Vinson, Jason Burkett, and Arnold Caylor

A seedless watermelon trial was conducted at the North Alabama Horticulture Substation (NAHRC) in Cullman, Alabama (Tables 1 and 2).

Four-week-old seedless watermelon transplants were set on June 2 at E.V. Smith. Seedless watermelon do not produce viable pollen so a seeded variety was planted along with the seedless varieties to serve as a pollenizer. Although any seeded watermelon can serve as a pollenizer, seed companies have bred watermelons to serve specifically as pollenizers. In this study “Companion” was used as the pollenizer variety. One ‘Companion’ was planted for every two or three seedless transplants to insure proper pollenation. Drip irrigation and black plastic mulch were used at both locations.

Soils were fertilized according to the recommendations of the Auburn University Soil Testing Laboratory. For current recommendations for pest and weed control in vegetable production in Alabama, consult your county extension agent or go online to <http://www.aces.edu/counties/>.

At NAHRC, fertilization consisted of a preplant application of 13-13-13- at a rate of 460 pounds per acre on May 26. Fertilization after planting consisted of weekly injections of calcium nitrate at a rate of 40 pounds per acre.

Watermelons were harvested on August 22 and were graded according to the Watermelon Grader’s Guide (Circular ANR-681 from the Alabama Cooperative Extension System) and marketable yield was determined (Table 3).

Table 1. Ratings of the 2007 Seedless Watermelon Variety Trial¹

Location	NAHRC
Weather	5
Fertility	5
Irrigation	5
Pests	5
Overall	5

¹ See introduction for description of ratings scales

Two melons from each plot were used to measure soluble solids (sweetness), hollow heart, and rind thickness. A hand-held refractometer was used to measure soluble solids. Watermelons with readings below 10 are not considered sweet.

There were very few differences in marketable yield. This year, Nun 6032WM, an experimental entry, topped the list in marketable yield. However, yields produced were statistically similar to all other varieties with the exception of ‘Boston’.

The only varieties that exhibited hollow heart were Nun 6032WM and ‘Liberty’ at 0.13 inches and 0.17 inches respectively. Watermelons of the varieties ‘Liberty’, ‘Cominskey’, ‘Revolution’, and Nun 6032WM exhibited rind thicknesses similar to the standard variety Tri-X-313. Rind thickness is an indication of how well melons will ship but as rind thickness increases the

Table 2. Seed Source, Fruit Characteristics, and Relative Earliness of Selected Seedless Watermelon Varieties

Variety	Seed source	Fruit shape	Flesh color	Days to harvest	Disease claims ¹	Years evaluated
Boston	Nunhems	Round	Red	—	—	07
Cominskey	Seminis	Round	Red	—	—	05,07
Constitution	Seedway	Blocky	Red	87	ANT,FW	02-05,07
Independence	Nunhems	Round	Red	—	—	07
Liberty	Sunseeds	Oval	Red	85	—	04,05,07
Nun 6032WM	Nunhems	Round	Red	—	—	07
Nun 6033WM	Nunhems	Round	Red	—	—	07
Nun 3072WM	Nunhems	Round	Red	—	—	07
Revolution	Sunseeds	Blocky	Red	83	FW*	02-07
Tri-X-313	Syngenta	Oval	Red	—	—	96-98,03,05,07

¹ Disease claims: ANT = Anthracnose; FW = Fusarium Wilt; * = Race 1 only; — = not found, from seed catalog.

amount of edible flesh decreases.

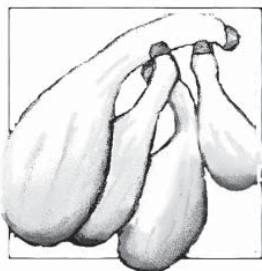
Soluble solids of all varieties were above 10. 'Liberty' had the highest reading at 12.53. This was statistically similar to all other with the exception of Nun 3072WM.

Overall, there were few differences in marketable

yield and marketable number. Considering varietal performance in the other categories along with yield and number will provide a little more information and aid in variety selection.

Table 3. Yield and Quality of Selected Seedless Watermelon Varieties

Variety	Total marketable yield <i>lbs/a</i>	Total marketable fruits <i>no/a</i>	Individual fruit weight <i>lbs/a</i>	Hollow heart <i>in</i>	Rind thickness <i>in</i>	Soluble solids <i>brix</i>
Nun 6032WM	52,423	2,936	17.38	0.13	0.69	11.90
Revolution	43,880	2,828	15.50	0.00	0.69	11.93
Tri-X-313	43,552	2,697	16.03	0.00	0.79	11.77
Constitution	42,648	3,393	12.57	0.00	0.56	11.65
Independence	40,839	2,675	15.06	0.00	0.57	11.88
Nun 3072WM	40,551	5,198	7.83	0.00	0.53	10.28
Nun 6033WM	37,726	2,371	16.16	0.00	0.60	11.80
Liberty	37,576	2,117	17.13	0.17	0.71	12.53
Cominskey	35,514	2,494	14.23	0.00	0.71	12.10
Boston	33,816	2,378	13.93	0.00	0.58	12.23
R²	0.20	0.70	0.71	0.30	0.50	0.30
CV	30	23	14	420	15	9.0
LSD	18,152	1,010	3.00	0.17	0.14	1.53



Summer Squash Trials Consistent in Early and Total Yields



Joe Kemble, Edgar Vinson, Randy Akridge, and Jason Burkett

A summer squash variety trial was conducted at the E.V. Smith Research Center (EVSRC) in Shorter, Alabama, and the Brewton Agricultural Research Unit (BARU) in Brewton, Alabama (Tables 1 and 2).

Soils were fertilized according to the recommendations of the Auburn University Soil Testing Laboratory. At BARU, plants received weekly injections of calcium nitrate (at a rate of 10 pounds per acre) from June 19 through July 9. At EVSRC, plants received weekly injections, alternating between potassium nitrate and calcium nitrate (at a rate of 7 pounds per acre).

For current recommendations for pest and weed control in vegetable production in Alabama, consult your county extension agent or go online to <http://www.aces.edu/counties/>.

At both locations beds were formed and plastic mulch with drip irrigation was used. Squash varieties were direct seeded on black plastic mulch on May 31 at BARU and May 4 at EVSRC. Beds were 20 feet long on 6-foot centers at EVSRC and 20 feet long on 5-foot centers at BARU. Spacing within a row was 1.5 feet at both locations.

Squash were harvested seven times between July 2 and July 16 at BARU and nine times between June 6 through June 17 at EVSRC. Squash were graded as marketable and non marketable according to the United States Standards for Grades of Summer Squash (U.S. Dept. Agr. G.P.O 1987-180-916:40730 AMS) (Table 3).

Table 1. Ratings of the 2007 Summer Squash Variety Trial¹

Location	BARU	EVSRC
Weather	5	4
Fertility	5	5
Irrigation	5	5
Pests	5	5
Overall	5	5

¹ See introduction for description of ratings scales

At BARU, ‘Conqueror III’ has topped the list in early yields for three consecutive years. This year, ‘Conqueror III’ produced yields similar to XPT 1832 III, ‘Enterprise’, and ‘Gentry’ (Table 3). Although ‘Conqueror III’ produced among the highest yields, it also produced the lowest number of fruit per acre. This is explained by the fact that weight of individual fruit (calculated by dividing early marketable yield by early marketable number) of ‘Conqueror III’ was the lowest among the top yielding varieties. Total marketable yields revealed fewer differences among varieties. ‘Fortune’ and ‘Liberator III’ were added to the list of top producers.

At EVSRC, ‘Conqueror III’ and XPT 1832 III were again among the top-producing varieties in early yield. These were similar to ‘Lioness’, which produced lower early yields at BARU. In the total yield category, ‘Conqueror III’ produced significantly higher yields than all

Table 2. Seed Source, Fruit Type, and Relative Earliness of Selected Squash Varieties

Variety	Type ¹	Seed source	Days to harvest	Disease claims ²	Years evaluated
Conqueror III	F1	Seminis	41	CMV, PRSV, WMV, ZYMV	05-07
Early Prolific	OP	Seedway	42	--	07
Enterprise	F1	Seedway	44	--	07
Fortune*	F1	Novartis	39	--	99,04-07
Gentry	F1	Novartis	43	—	95-99,02-07
Gold Star	F1	Seedway	44	CMV, PM	07
Liberator III	F1	Seminis	41	CMV, WMV, ZYMV	06,07
Lioness	F1	Harris Moran	--	MV, WMV, ZYMV	04-07
Sun Ray	F1	Seedway	45	CMV, PM, WMV	03,04,07
XPT 1832 III	F1	Sieger	44	CMV, WMV, ZYMV	06,07

¹ Type: F1 = Hybrid, OP = Open pollinated; ² Disease claims: CMV = Cucumber Mosaic Virus; PM = Powdery Mildew; PRSV = Papaya Ring Spot Virus; ZYMV = Zucchini Yellow Mosaic Virus; WMV = Watermelon Mosaic Virus; * Precocious Variety; — = none, from seed catalogs.

other varieties. Total marketable yields of XPT 1832 III and 'Enterprise' were similar; these two varieties produced significantly higher yields than the remaining varieties.

Table 3. Early Yield of Selected Yellow Summer Squash Varieties¹

Variety	Early marketable weight lbs/a	Early marketable number no/a	US No. 1 number no/a	US No. 1 weight lbs/a	US No. 2 number no/a	US No. 2 weight lbs/a	Cull weight lbs/a
Brewton Agriculture Research Unit							
Conqueror III	4,536	12,251	10,073	3,212	2,178	1,324	364
XPT 1832 III	3,784	13,613	12,070	2,992	2,057	1,056	256
Gentry	3,661	15,518	13,159	2,580	2,360	1,081	208
Enterprise	3,533	10,618	8,258	2,109	2,360	1,424	471
Fortune	3,126	9,892	8,168	2,055	1,724	1,071	649
Liberator III	3,012	8,712	7,351	2,216	1,815	1,061	931
Gold Star	2,787	11,162	9,075	1,813	2,087	974	426
Sunray	2,585	11,162	10,709	2,318	908	535	298
Lioness	2,122	5,627	4,447	1,300	1,573	1,096	1,094
Early Prolific	1,916	6,806	5,990	1,442	1,089	632	430
R²	0.54	0.70	0.61	0.50	0.25	0.24	0.40
CV	26	22	26	32	49	47	85
LSD	1,175	3,309	3,397	998	1,336	729	657
E.V. Smith Research Center							
XPT 1832 III	3,221	13,703	•	•	•	•	2,300
Conqueror III	3,199	11,072	•	•	•	•	3,321
Lioness	2,911	9,892	•	•	•	•	2,722
Liberator III	2,475	8,984	•	•	•	•	4,083
Enterprise	2,369	7,442	•	•	•	•	3,269
Fortune	2,193	8,894	•	•	•	•	3,217
Sunray	2,166	8,712	•	•	•	•	2,753
Gentry	2,099	9,075	•	•	•	•	1,217
Early Prolific	1,386	4,991	•	•	•	•	3,336
Gold Star	1,376	5,354	•	•	•	•	3,884
R²	0.60	0.70	•	•	•	•	0.44
CV	26	22	•	•	•	•	34
LSD	394	2,863	•	•	•	•	665

¹ Early marketable number and early marketable yield are a combination of the US No.1 and No.2 grades. At EVSRC, US No1 and No 2 grades were combined at harvest so data are not presented here. • = data not available

Table 4. Total Yield of Selected Yellow Summer Squash Varieties¹

Variety	Total marketable weight <i>lbs/a</i>	Total marketable number <i>no/a</i>	US No. 1 number <i>no/a</i>	US No. 1 weight <i>lbs/a</i>	US No. 2 number <i>no/a</i>	US No. 2 weight <i>lbs/a</i>	Cull weight <i>lbs/a</i>
Brewton Agriculture Research Unit							
XPT 1832 III	9,820	35,846	30,764	7,270	5,082	2,550	471
Conqueror III	8,692	26,862	21,508	5,744	5,354	2,948	672
Fortune	8,394	32,035	24,775	5,548	7,260	2,847	996
Gentry	8,208	34,939	29,403	5,783	5,536	2,425	798
Enterprise	8,141	27,770	20,963	4,653	6,806	3,488	603
Liberator III	7,887	25,229	19,602	4,973	5,627	2,914	1,646
Lioness	6,333	17,969	13,250	3,603	4,719	2,731	1,294
Sunray	6,290	24,684	21,236	4,723	3,449	1,567	594
Gold Star	6,000	24,230	19,330	3,719	4,901	2,281	576
Early Prolific	5,371	18,513	13,613	3,245	4,901	2,125	2,464
R²	0.60	0.72	0.70	0.60	0.30	0.30	0.61
CV	18	16	21	24	37	35	55
LSD	1,999	6,017	6,372	1,703	2,830	1,323	799
E.V. Smith Research Center							
Conqueror III	9,428	24,956	•	•	•	•	5,341
XPT 1832 III	8,318	28,133	•	•	•	•	4,265
Enterprise	7,514	18,695	•	•	•	•	6,877
Fortune	7,176	23,051	•	•	•	•	5,895
Liberator III	7,057	20,600	•	•	•	•	6,409
Lioness	6,872	18,513	•	•	•	•	5,004
Gentry	5,751	22,415	•	•	•	•	3,429
Sunray	4,927	18,241	•	•	•	•	4,758
Early Prolific	4,696	14,883	•	•	•	•	7,720
Gold Star	4,221	14,611	•	•	•	•	5,475
R²	60	0.53	•	•	•	•	0.50
CV	23	22	•	•	•	•	26
LSD	992	6,396	•	•	•	•	939

¹ Total marketable number and total marketable yield are a combination of the US No.1 and No.2 grades. At EVSRC, US No1 and No 2 grades were combined at harvest so data are not presented here. • = data not available



Vidalia Onion Variety Trial, 2007



**George Boyhan, Reid Torrance, Mike Dollar, Shane Curry,
Cliff Riner, Randy Hill, and Tony Bateman**

Onion variety trials continue to be an important part of the work at the Vidalia Onion and Vegetable Research Center in Lyons, Georgia. These trials have been underway since the site was taken over in 1999. The information generated is used by growers, seed companies, and the Georgia Department of Agriculture to assess the suitability and performance of short-day onion varieties in southeast Georgia.

There were 49 varieties in the trial in the 2006-07 season. Plantbeds were sown on September 18, 2006 in high density plantings of 60 seed per linear foot. Plantbeds were grown according to University of Georgia Cooperative Extension Service recommendations for plantbed onions (Boyhan et al., 2001).

Onions were transplanted on November 20, 2006 to their final spacing of four rows on a prepared bed with 6 feet between beds. Row spacing was 12 inches with a 5.5 inch in-row spacing. Plants were grown according to University of Georgia Cooperative Extension Service recommendations for weed, disease, and insect control, as well as overall fertility (Boyhan et al., 2001).

The experiment was a randomized complete block design with four replications. Each plot was 35 feet long with a 5 foot in-row alley. Twenty-five feet of each plot were harvested when deemed mature for that variety. Onions were pulled and laid on the ground for two days before the tops and roots were clipped from the bulbs. The bulbs were immediately weighed to determine total yield.

Weighed and bagged onions were heat cured for 24 hours at 95 degrees F then graded into jumbo and medium sizes. Jumbos were onion greater than or equal to 3 inches and mediums were less than 3 inches and greater than or equal to 2 inches in diameter. Cull onions included damaged or diseased onion or onions below 2 inches in size. Both jumbo and medium sized onion weights were recorded.

A 25-bulb sample was sent to National Labs in Collin, Georgia, for additional testing for pungency, thio-sulfonates, and lacrimatory factors. Additionally, approximately 50 pounds of onions were transported to the

Ratings of the 2007 Vidalia Onion Trial¹

Location	Vidalia Onion and Vegetable Research Center
Weather	5
Fertility	5
Irrigation	5
Pests	5
Overall	5
Soil type	Tifton loamy sand
Water holding capacity (in/in)	0.06-0.15

¹ See introduction for description of ratings scales

Vidalia Onion Research Laboratory in Tifton, Georgia, for further testing. A 10-bulb sample was used to determine pungency using a pyruvate test as developed by Schwimmer and Weston (1961) and modified by Randle and Busard (1993). The remainder of the onions were placed in controlled atmosphere storage with 5% CO₂, 3% O₂, and 70% relative humidity.

The most notable difference between this year and previous years was the amount of time taken to harvest the onions. In previous years varieties were harvested over a 24- to 35-day range. This year all the varieties were harvested over a 9-day period. This accelerated harvest schedule eliminated late season bacterial diseases that have plagued the trial in previous years. It should be noted, based on other experiments, that the 2007 harvest season did not have a very high pressure of bacterial diseases. Because this accelerated harvest may not truly reflect the performance of these varieties or the conditions in the industry, the harvest window for these varieties will be expanded next year.

Eight varieties had total yield in excess of 1,000 50-pound bags per acre. These included NUN1002, 'Honeybee', SS2005, WI-129, NUN1003, WI-131, SS2011, and 'Sweet Harvest'. All of these were harvested on the first harvest date. All had better than 80% marketable onions except WI-129 and 'Sweet Harvest'. These varieties were the top performers for jumbo yields as well, except for 'Sweet Harvest', which was replaced by 'Savannah Sweet'. Only nine varieties had medium yields that exceeded 10% of the total marketable yield. The majority of varieties had me-

Table 1. Vidalia Onion Variety Trial Yields, 2007

Variety	Company	Color	Harvest date	Total yield	50-lb bag/a		
					Jumbos	Mediums	
1 J3001	Bejo Seed Company	Yellow	4/23/07	850	593	30	
2 J3002	Bejo Seed Company	Yellow	4/24/07	729	573	31	
3 J3003	Bejo Seed Company	Yellow	4/24/07	890	688	20	
4 Sapelo Sweet	D. Palmer Seed Co.	Yellow	4/19/07	845	631	77	
5 Mr. Buck	D. Palmer Seed Co.	Yellow	4/24/07	760	557	41	
6 Georgia Boy	D. Palmer Seed Co.	Yellow	4/24/07	841	611	45	
7 Miss Megan	D. Palmer Seed Co.	Yellow	4/24/07	691	491	37	
8 Pinot Rouge	D. Palmer Seed Co.	Red	4/19/07	637	464	98	
9 Ohoopee Sweet	D. Palmer Seed Co.	Yellow	4/19/07	748	559	55	
10 YGH 105101	Dessert Seed Co., Inc.	Yellow	4/19/07	643	576	59	
11 YGH 15085	Dessert Seed Co., Inc.	Yellow	4/24/07	548	426	35	
12 YGH 15082	Dessert Seed Co., Inc.	Yellow	4/24/07	666	501	38	
13 YGH 114101	Dessert Seed Co., Inc.	Yellow	4/24/07	626	462	33	
14 YGH 108101	Dessert Seed Co., Inc.	Yellow	4/24/07	741	593	29	
15 YGH 15094	Dessert Seed Co., Inc.	Yellow	4/24/07	698	509	40	
16 HSX-61304F1	Hortag Seed Co.	Yellow	4/28/07	584	320	57	
17 NUN3004	Nunhems USA, Inc., CA	Red	4/24/07	746	573	48	
18 NUN3005	Nunhems USA, Inc., CA	Red	4/25/07	739	599	54	
19 NUN3006	Nunhems USA, Inc., CA	Red	4/27/07	676	529	62	
20 NUN1002	Nunhems USA, Inc., CA	Yellow	4/16/07	1167	1002	15	
21 NUN1003	Nunhems USA, Inc., CA	Yellow	4/19/07	1050	875	37	
22 NUN1004	Nunhems USA, Inc., CA	Yellow	4/24/07	802	676	35	
23 NUN1005	Nunhems USA, Inc., CA	Yellow	4/24/07	744	585	42	
24 NUN1006	Nunhems USA, Inc., CA	Yellow	4/24/07	810	647	28	
25 Sweet Vidalia	Nunhems USA, Inc., ID	Yellow	4/19/07	754	515	47	
26 Sweet Caroline	Nunhems USA, Inc., ID	Yellow	4/24/07	740	551	30	
27 Caramelo	Nunhems USA, Inc., ID	Yellow	4/24/07	774	568	24	
28 Nirvana	Nunhems USA, Inc., ID	Yellow	4/19/07	847	634	29	
29 Mata Hari	Nunhems USA, Inc., ID	Red	4/24/07	618	483	61	
30 Sweet Jasper	Sakata Seed America, Inc.	Yellow	4/24/07	694	501	41	
31 Sweet Harvest	Sakata Seed America, Inc.	Yellow	4/16/07	1001	652	55	
32 XON-204Y	Sakata Seed America, Inc.	Yellow	4/16/07	858	667	53	
33 Ponderosa	Sakata Seed America, Inc.	Yellow	4/19/07	749	596	39	
34 XON-403Y	Sakata Seed America, Inc.	Yellow	4/19/07	898	719	41	
35 XON-408Y	Sakata Seed America, Inc.	Yellow	4/19/07	815	713	40	
36 Granex Yel PRR	Seminis Vegetable Seeds	Yellow	4/24/07	675	408	93	
37 Granex 33	Seminis Vegetable Seeds	Yellow	4/24/07	681	490	27	
38 Savannah Sweet	Seminis Vegetable Seeds	Yellow	4/24/07	880	728	23	
39 Century	Seminis Vegetable Seeds	Yellow	4/24/07	754	591	42	
40 Pegasus	Seminis Vegetable Seeds	Yellow	4/26/07	728	511	41	
41 Golden Eye	Seminis Vegetable Seeds	Yellow	4/24/07	768	621	33	
42 Honeycomb	Shamrock Seed	Yellow	4/16/07	691	474	83	
43 Sugar Belle	Shamrock Seed	Yellow	4/16/07	615	433	61	
44 SSC 1535 F!	Shamrock Seed	Yellow	4/16/07	843	596	52	
45 Honeybee	Shamrock Seed	Yellow	4/16/07	1138	936	30	
46 SS2005	Solar Seed Company	Yellow	4/16/07	1125	950	106	
47 SS2011	Solar Seed Company	Yellow	4/16/07	1012	820	30	
48 WI-131	Wannamaker Seed	Yellow	4/16/07	1041	815	32	
49 WI-129	Wannamaker Seed	Yellow	4/16/07	1071	772	29	
				Coefficient of variation	9%	10%	50%
				Fisher's Protected LSD	138	117	41
				w/Bonferroni adjustment (p=0.05)			

dium yields that were well below 10% of total marketable yield.

Seedstem numbers ranged from 0 to 54 for a 35-foot plot. The highest number of seedstems was with 'Sweet

Vidalia', which in recent years has had a very high number of seedstems. This year, as compared to previous years, a significant number of seedstems occurred, but there were not as many seedstems as in 2004. Six vari-

eties had no seedstems this year; they included NUN 3005, J3002, 'Ponderosa', WI-129, XON-408Y, and NUN 1005.

Numbers of double bulbs were comparable to 2006, but were much lower than 2005. There were eight varieties with more than 20 doubled bulbs, but there were also 12 varieties that had no doubled bulbs this year.

The pyruvate analysis ranged from 3.4 to 6.7 um/gfw for the varieties in the trial. Overall this was slightly higher than for 2006 (2.8 to 6.3 um/gfw). The soluble solids (percent sugar) ranged from 8.5 to 12.2. These sugar values are slightly higher than for 2006, which had a range of 7.8 to 11.6%.

In conclusion, the trial went very well with reasonably good yields for most varieties. Percent marketable yield was also very good across all the varieties. This may be due to the shorter harvest window this year.

Literature Cited

- Boyhan, G.E. et al. 2001. Onion production guide. Univ. of Ga. Bul. No. 1198.
- Randle, W.M. and M.L. Bussard. 1993. Streamlining onion pungency analyses. *HortScience*. 28: 60.
- Schwimmer, S. and W. Weston. 1961. Enzymatic development of pyruvic acid in onion as a measure of pungency. *J. Sci. Food Chem.* 9: 301-304.

Table 2. Seedstems, Doubles, Pungency, and Soluble Solids of Vidalia Onion Varieties, 2007

Variety	Seedstems ¹	Doubles ¹	Pungency	Soluble solids
	no/35-ft plot		umoles/gfw	%
1 J3001	4	2	4.8	9.1
2 J3002	0	0	4.6	9.5
3 J3003	30	0	4.7	9.5
8 Pinot Rouge (red)	5	1	4.1	12.2
9 Ohoopee Sweet	8	13	5.2	10.3
4 Sapelo Sweet	34	38	5.4	10.3
7 Miss Megan	5	3	4.5	9.3
5 Mr. Buck	16	3	4.8	9.5
6 Georgia Boy	25	6	5.1	9.7
10 YGH 105101	19	1	5.4	9.9
11 YGH 15085	1	0	4.6	9.5
12 YGH 15082	1	1	5.0	9.3
14 YGH 108101	13	0	5.4	9.2
15 YGH 15094	6	1	4.5	9.3
13 YGH 114101	29	3	5.0	9.2
16 HSX-61304F1	14	5	5.5	9.7
20 NUN1002	6	0	5.2	9.2
21 NUN1003	19	24	4.5	9.4
23 NUN1005	0	0	4.4	9.0
17 NUN3004 (red)	9	7	5.0	10.6
22 NUN1004	2	0	4.1	9.4
24 NUN1006	2	0	3.4	10.1
18 NUN3005 (red)	0	4	5.2	9.4
19 NUN3006 (red)	12	3	5.4	9.6
25 Sweet Vidalia	54	8	5.1	10.0
28 Nirvana	32	2	5.7	10.4
29 Mata Hari (red)	1	10	5.7	10.0
26 Sweet Caroline	8	1	4.7	10.1
27 Caramelo	16	0	4.6	9.8
32 XON-204Y	11	11	4.8	9.6
31 Sweet Harvest	19	10	5.4	9.1
33 Ponderosa	0	3	5.9	8.9
35 XON-408Y	0	6	5.2	9.6
34 XON-403Y	2	6	5.3	9.8
30 Sweet Jaspe	14	0	4.5	9.7
36 Granex Yel PRR	17	38	4.8	9.6
37 Granex 33	3	7	5.3	9.5
39 Century	2	0	3.9	10.0
41 Golden Eye	5	2	4.6	9.4
38 Savannah Sweet	8	1	4.2	8.9
40 Pegasus	1	0	4.3	9.3
43 Sugar Belle	2	16	6.7	10.1
42 Honeycomb	21	13	4.8	11.1
44 SSC 1535 F1	9	34	4.9	9.7
45 Honeybee	16	21	4.5	8.7
47 SS2011	5	28	4.6	8.5
46 SS2005	8	24	4.7	8.5
48 WI-131	11	24	4.6	8.8
49 WI-129	0	16	4.6	9.0
Coefficient of variation	39%	30%	13%	5%
Fisher's Protected LSD	4	1	1.1	0.8
w/Bonferroni adjustment (p=0.05)				

¹ Measured on April 9, 2007.



Pumpkin Variety Trials, Fall 2006 and Summer 2007



George Boyhan, Cliff Riner, Randy Hill, Denny Thigpin, and Tony Bateman

The University of Georgia has developed a new pumpkin variety called ‘Orange Bulldog’, which has greater virus disease resistance compared to conventional pumpkins. Over the past several years we have been testing this variety against commercial pumpkins in both spring/summer and fall trials.

Land for the 2006 trial at the Vidalia Onion and Research Center in Lyons, Georgia, was prepared according to University of Georgia Cooperative Extension Service recommendations. Fertilizer was applied according to University of Georgia Soil Test Laboratory recommendations. Weed control followed standard recommendations for Georgia. No fungicides or insecticides were used with either trial.

In 2006 transplants were set on formed 6-foot on-center beds with an in-row spacing of 6 feet on June 26, 2006. Plant stand was recorded on July 20, 2006. Pumpkins were harvested on September 19, and total weight and fruit count were recorded. Data were subjected to analysis of covariance with plant stand as a covariate.

In 2007 seed were sown on May 21, 2007; the planting arrangement was similar to that used in 2006. Pumpkins were harvested on August 7, and total weight and counts were recorded.

These experiments were arranged in a randomized complete block design with four replications. Each experimental unit or plot was 10 hills.

Ratings of the 2007 Pumpkin Trial ¹	
Location	Vidalia Onion and Vegetable Research Center
Weather	5
Fertility	5
Irrigation	5
Pests	1-2 (fall) 2-3 (summer)
Overall	4
Soil type	Tifton loamy sand
Water holding capacity (in/in)	0.06-0.15

¹ See introduction for description of ratings scales

Results from these trials mirrored previous trials in which ‘Orange Bulldog’ outperformed conventional pumpkins during fall trials. In 2006, three of the conventional pumpkin varieties had no yield, while none of these commercial lines had yields near the yield of ‘Orange Bulldog’. This reflects high virus infection rates in the conventional lines. During fall production these viruses can infect young plants, resulting in plant death before any appreciable yield can be realized.

In the summer 2007 trial, ‘Orange Bulldog’ had significantly higher yield than all the entries except for PMK-06-04 and ‘Alladin’. In previous trials, the performance of ‘Orange Bulldog’ was comparable to commercial varieties during spring and summer when virus pressure is much lower.

Variety	Yield <i>lbs/a</i>	Count <i>no/a</i>
Orange Bulldog	22,763	2,662
Aladdin	360	61
Magic	366	30
Pro Gold 200	944	151
Gladiator	1,420	121
Wizard	0	0
Spartan	414	30
Autumn King	0	0
Gold Rush	0	0
Coefficient of Variation:	92%	87%
Fisher's Protected LSD ($p \leq 0.05$):	3,521	387

Variety	Source	Yield <i>lbs/a</i>	Count <i>no/a</i>
PMK-06-04	D. Palmer	34,633	3,418
PMK-02-03	D. Palmer	12,297	4,296
PMK-06-02	D. Palmer	14,759	4,417
PMK-06-01	D. Palmer	12,508	4,175
PMK-06-05	D. Palmer	23,159	2,178
Gold Medal F ₁	Rupp	5,409	484
Red Eye	Rupp	26,091	2,450
Gold Challenger F ₁	Rupp	23,513	1,845
Alladin	Seedway	30,743	2,481
Orange Bulldog	UGA	43,140	3,570
Coefficient of Variation:		52%	30%
Fisher's Protected LSD ($p \leq 0.05$):		14,242	1,065

Tissue analyses for viruses on 'Orange Bulldog' and conventional pumpkins indicated that 'Orange Bulldog' was infected with zucchini yellow mosaic virus, but that symptom development was slight. In conventional pumpkins, papaya ringspot virus predominated with se-

vere symptom development particularly during fall production when insect vectors (aphids) are at the highest.

'Orange Bulldog' seed will be available this coming season (2008). If you wish to purchase seed, please contact the senior author for information.



Cantaloupe Variety Trial, 2007



George Boyhan, Randy Hill, and Denny Thigpen

Cantaloupe variety trials have become a routine part of research efforts at the Vidalia Onion and Vegetable Research Center in Lyons, Georgia. This year’s trial had 11 entries, which represent several different types of melons.

The trial in 2007 was a randomized complete block design with four replications. Each plot consisted of 10 transplants planted on plastic covered raised beds. The in-row spacing was 3 feet and the between-row spacing was 6 feet. Cultural practices followed University of Georgia Cooperative Extension Service recommendations for cantaloupes. Preplant fertilizer along with fertigation was used for production. The plants were transplanted on May 31, 2007 and harvested on July 25, 27, and 30. Total yield and count from each plot was measured.

In addition, two fruit from each plot were measured for length, width, flesh depth (outside rind to internal cavity), soluble solids (percent sugar), and firmness.

Yield differences ranged from 4,289 to 31,043 pounds per acre. Very few fruit of ‘Oui’ were harvested. Both ‘Tasty Sherbert’ and ‘Master Choice’ had very good yields. They were a pound or so lighter per fruit compared to ‘Athena’ or ‘Aphrodite’. ‘Orange Sherbert’, which is listed as a specialty melon by the seed company, had a distinctive suture line and fairly good yields. Other varieties that performed well included ‘Victoria’ and ‘#2100’.

2007 Cantaloupe Variety Trial Conditions ¹	
Location	Vidalia Onion and Vegetable Research Center
Weather	5
Fertility	5
Irrigation	5
Pests	5
Overall	4
Soil type	Tifton loamy sand
Water holding capacity (in/in)	0.06-0.15

¹ See introduction for description of ratings scales

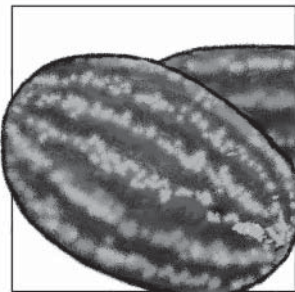
There were differences in fruit length and width and this was reflective of the size differences (weights) between the varieties. There were no statistical differences in flesh depth, soluble solids, or firmness. The lack of differences in soluble solids reflects a great deal of variability in the measured fruit even though there were apparent differences in the reported means. This is the first year we are reporting firmness so it is unclear how useful this measurement will be until more years of data are collected.

In conclusion, the trial went well this year, although the variability in soluble solids indicates some problems with harvest maturity.

Georgia Cantaloupe Variety Yields and Fruit Characteristics

Variety	Source	Type	Yield <i>lb/ac</i>	Count <i>no/ac</i>	Length <i>in</i>	Width <i>in</i>	Flesh depth <i>in</i>	Soluble solids <i>%</i>	Firmness ¹ <i>flb</i>
Athena	Rogers	Eastern	13,516	2,299	8.2	6.6	1.9	10.8	6.6
Aphrodite	Rogers	Eastern	19,070	2,541	8.6	7.8	2.9	8.5	6.8
Victoria	D. Palmer Seed		25,156	5,143	6.2	6.3	1.6	6.7	7.2
Oui	D. Palmer Seed		4,289	1,634	6.0	5.8	1.6	7.9	6.1
Orange Sherbert	D. Palmer Seed	Specialty	24,896	3,933	7.1	6.4	1.7	5.6	7.5
ACR-1075	Abbott & Cobb		13,655	3,086	7.3	6.0	1.9	10.3	5.3
ACR-1085	Abbott & Cobb		16,299	4,054	6.8	5.8	1.7	8.8	7.2
#351	Abbott & Cobb		17,926	3,388	8.1	6.5	2.0	10.5	8.1
#2100	Abbott & Cobb		25,265	3,872	8.4	7.2	2.1	9.3	6.9
Tasty Sherbert	D. Palmer Seed	F ₁ Tuscan type	27,993	5,808	7.5	6.6	2.0	9.4	4.5
Master Choice	D. Palmer Seed	F ₁ Tuscan type	31,043	5,506	7.8	7.0	2.0	10.8	5.7
Coefficient of Variation:			29%	27%	9%	7%	30%	35%	27%
Fisher's Protected LSD (p≤0.05):			7,018	1,210	0.8	0.6	NS	NS	NS

¹Pounds force with an 8 mm probe.



Watermelon Variety Trial, 2007



George Boyhan, Randy Hill, and Denny Thigpen

Watermelon variety trials have been conducted by the University of Georgia for the past several years at the Vidalia Onion and Vegetable Research Center in Lyons, Georgia. In 2007, 21 varieties were entered in the trial and 20 of the entries were triploid varieties. This is the first year that all of the submitted varieties were triploids. The one variety that was not a triploid variety was 'Jamboree', which was specifically requested so we would have a pollen source for this trial.

Seedlings were transplanted onto plastic-covered prepared beds formed on 6-foot centers. Beds were prepared and fertilized according to University of Georgia Cooperative Extension Service recommendations. Drip tape was laid under the plastic and was used for both irrigation and fertigation.

The experiment was arranged as a randomized complete block design with four replications. Along with 'Jamboree', pollenizer plants were interplanted within the experiment to insure adequate pollination.

Transplants were planted on May 30, 2007. Harvest began on July 31. There were three harvests all together with additional melons harvested on August 2 and 6, 2007. Two fruit from each plot were selected and measured for length, width, rind thickness, soluble solids (sugar content), and firmness. Also any irregularities were noted such as hollow heart or under ripeness.

Yield differences were quite dramatic, which probably reflects a lack of adequate pollenizer plants (Table 1). This is reinforced by the high coefficient of variation (CV) listed for both yield and fruit count. These values therefore are probably not reflective of the potential performance of these varieties.

Enough fruit was measured to adequately evaluate fruit characteristics among the varieties in this trial. This is reflected in the overall low CV values. All of the fruit tested were small crimson sweet type melons with the exception of 'Jamboree', which was an Allsweet type.

Rind thickness across all of the varieties was approximately 1 inch. Many triploids in this class have thicker rinds compared to seeded melons of the same type and much thicker rinds than are found in mini melons.

2007 Watermelon Variety Trial Conditions¹

Location	Vidalia Onion and Vegetable Research Center
Weather	5
Fertility	5
Irrigation	5
Pests	5
Overall	2-3
Soil type	Tifton loamy sand
Water holding capacity (in/in)	0.06-0.15

¹ See introduction for description of ratings scales

Soluble solids or percent sugar was relatively good across the tested varieties; however, there were several entries that had below 10% averages and in one case—Tri-X 313—significantly below 10%.

This is the first year we have tested fruit firmness with an FDK 160 fruit tester with an 8 mm probe. Two entries,

Table 1. Watermelon Variety Trial Yield and Number, Georgia, 2006

Variety	Source	Type	Yield <i>lbs/a</i>	Number <i>no/a</i>
Wrigley	Seminis	Triploid	14,084	968
Palomar	Rogers	Triploid	8,676	545
Triple Threat	Rogers	Triploid	5,881	605
Tri-X 313	Rogers	Triploid	4,574	303
RWT 8173	Rogers	Triploid	9,527	686
RWT 8203	Rogers	Triploid	17,944	1,029
RWT 8174	Rogers	Triploid	24,426	1,613
Jamboree	Rogers	Diploid	42,314	1,936
Summertime	D. Palmer	Triploid	6,131	484
WT-05-99	D. Palmer	Triploid	22,827	1,482
WT-05-98	D. Palmer	Triploid	1,992	121
WT-05-112	D. Palmer	Triploid	45,109	3,025
WT-05-102	D. Palmer	Triploid	11,132	605
WTI-05-109	D. Palmer	Triploid	14,169	968
Yellow Bird	D. Palmer	Triploid	3,255	363
Promise	D. Palmer	Triploid	3,013	242
#9570 HQ	Abbott & Cobb	Triploid	29,649	2,097
#7167	Abbott & Cobb	Triploid	3,400	182
ACX 7125T	Abbott & Cobb	Triploid	24,765	1,815
SSW9800	Solar Seed	Triploid	22,474	1,694
Coefficient of Variation:			79%	82%
Fisher's Protected LSD ($p \leq 0.05$):			15,633	1,065

RWT 8174 and '#9570 HQ', had significantly higher firmness than the other entries. It is unclear if this is a true difference or an artifact of testing. Care has to be taken when using the fruit tester since differences can arise by how the tester is employed. As this tester is used more frequently, its value can be better determined.

More than half of the entries in the trial had one or more fruit with hollow heart. This high incidence of hollow

heart suggests that some environmental factor contributed to this problem rather than a genetic predisposition.

In conclusion, this year's trial results were not the best. There apparently were not sufficient pollinizer plants to reflect the true yield potential of the varieties, but the fruit characteristic measurements appeared adequate.

Table 2. Fruit Characteristics, Watermelon Variety Trial, Georgia, 2007

Variety	Length <i>in</i>	Width <i>in</i>	Rind thickness <i>in</i>	Soluble solids %	Firm- ness ¹ <i>lbf</i>
Wrigley	11.6	8.6	0.9	9.7	2.2
Palomar	10.0	9.4	1.1	10.4	2.0
Triple Threat	8.7	8.0	0.8	9.1	2.3
Tri-X 313	11.0	8.7	0.9	8.8	1.9
RWT 8173	11.1	8.7	0.8	10.1	2.2
RWT 8203	11.2	8.9	0.6	9.8	4.2
RWT 8174	12.1	9.0	0.7	11.6	2.1
Jamboree	17.4	8.6	0.9	10.4	1.9
Summertime	10.7	8.8	0.9	10.7	2.0
WT-05-99	11.2	9.3	0.9	10.3	2.2
WT-05-98	11.4	9.2	1.0	11.5	2.5
WT-05-112	11.9	9.6	0.8	10.6	2.2
WT-05-102	12.6	9.7	1.3	11.7	2.9
WTI-05-109	11.3	10.1	0.9	12.2	2.2
Yellow Bird	8.9	8.6	0.6	9.5	2.2
Promise	9.8	8.3	0.8	10.6	1.7
#9570 HQ	10.8	9.4	1.0	10.9	3.4
#7167	12.1	9.5	1.2	10.0	2.0
ACX 7125T	11.2	8.8	1.0	11.1	2.4
SSW9800	10.5	9.4	0.9	11.5	2.2
Coefficient of Variation:	7%	5%	12%	10%	25%
Fisher's Protected LSD ($p \leq 0.05$):	0.9	0.6	0.1	1.2	0.7

¹Pounds force with an 8 mm probe.

Seed Sources for Alabama Trials

Seeds were donated by the following companies:

Nunhems/Sunseeds

Richard Wojciak
12214 Lacewood Lane
Wellington, Florida 33414-4983
Phone : (561) 791 9061
Fax: (561) 798 4915
Mobile: (561) 371 2023
richard.wojciak@sunseeds.com

Palmer Seed Co.

P.O. Box 1866
Palmer City, FL 34991
(772) 221-0653

Sakata Seed America, Inc.

Tech Rep: Jay Jones
P.O. Box 880
Morgan Hill, CA 95038-0880
Phone: (239) 289-2130

Other sources included the following companies:

Abbot and Cobb, Inc.

Tech Rep: Russ Beckham
146 Old US Highway 84 West
Boston, GA 31626
Phone: (229) 498-2366
E-mail: rbeckham@rose.net

BHN

1310 McGee Avenue
Berkeley, CA 94703
Phone: (510) 526-4704
E-mail: mail@berkeleyhort.com

Harris Moran

P.O. Box 4938
Modesto, CA 95352
Phone: (209) 579-7333
(209) 527-8684

Harris Seeds

To order: (800) 544-7938
P.O. Box 22960
60 Saginow Dr.
Rochester, NY 14692-2960

Hollar

To order: (719) 254-7411
P.O. Box 106
Rocky Ford, CO 81067-0106
Phone: (719) 254-7411
Fax: (719) 254-3539
Website: www.hollarseeds.com

Johnny's Select Seeds

To order: (207) 437-4395
Tech. Rep: Steve Woodward
955 Benton Ave
Winslow, ME 04901
Phone: (207) 861-3900
E-mail: info@johnnyseeds.com

Rupp Seeds

To order: (800) 700-1199
17919 County Road B
Waseon, OH 43567

Sandoz Rogers/Novartis

To order: (912) 560-1863

Seedway

To order: (800) 952-7333
Tech Rep: James J. Pullins
1225 Zeager Road
Elizabethtown, PA 17022
Ph: (717) 367-1075
Fax: (717) 367-0387
E-mail: info@seedway.com

Siegers Seed Company

13031 Reflections Drive
Holland, MI 49424
Phone: (800) 962-4999
Fax: (616) 994-0333

Seminis Vegetable Seeds, Inc

Tech Rep: Rusty Autry
2221 North Park Ave.
Tifton GA 31796
Phone: (229) 386-0750

Tifton Seed Distribution Center

Tech Rep: Van Lindsey
Phone: (912) 382-1815

Willhite

To order: (800) 828-1840
Tech Rep: Don Dobbs
P.O. Box 23
Poolville, TX 76487
Fax: (817) 599-5843

Guidelines for Contributions to the Vegetable Variety Regional Bulletin

Vegetable variety evaluation and selection is an essential part of production horticulture. The vegetable variety regional bulletin is intended to report results of variety trials conducted by research institutions in the Southeast in a timely manner. Its intended audience includes growers, research/extension personnel, and members of the seed industry.

Timeliness and rapid turnaround are essential to better serve our audience. Hence, two bulletins are printed each year: one in November with results from spring crops, and another one in April or May with results from summer and fall crops. It is essential that trial results are available before variety decisions for the next growing season are made.

Here are a few useful guidelines to speed up the publications process for the next regional bulletin (fall 2007).

When: April 25, 2008

Deadline for fall 2008 variety trial report submissions.

What: Results pertaining to variety evaluation in a broad sense. This includes field performance, quality evaluation, and disease resistance. Here are a few tips:

- Follow the format used in the other regional bulletins.
- Include each author's complete mailing address, e-mail address, and phone number.
- Follow your own unit's internal review process. Contributions will be edited, but not formally reviewed.

How: Send a disk and hard copy to
Edgar Vinson or Joe Kemble
Department of Horticulture
101 Funchess Hall
Auburn University, AL 36849-5408

Or send e-mail to
vinsoed@auburn.edu
kembljm@auburn.edu

Location of Trials



AUBURN UNIVERSITY

1. North Alabama Horticulture Research Center, Cullman, AL
2. Brewton Agricultural Research Unit, Brewton, AL
3. E. V. Smith Research Center, Shorter, AL

THE UNIVERSITY OF GEORGIA

4. Vidalia Onion and Vegetable Research Center, Lyons, GA