
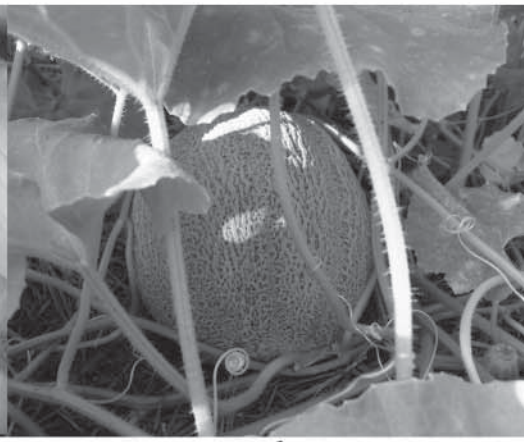

Spring 2005 Commercial


Vegetable Variety Trials



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Auburn University
University of Georgia
Mississippi State University
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Alabama Agricultural Experiment Station
Richard Guthrie, Directory
Auburn University, Alabama

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Contents

Names of chemicals are mentioned only for describing the production practices used. This represents neither a recommendation nor an endorsement of these products.

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Introduction: Tips for Interpreting Vegetable Varieties Performance Results

Edgar Vinson and Joe Kemble

The srping 2005 variety trials regional bulletin includes research results from Auburn University, The University of Georgia, Mississippi State University, and North Carolina State University. 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 personal size watermelon trial conducted at the E.V. Smith Research Center (see page 15,"Personal Size Watermelon Trial in Central Alabama"), 'Valdoria' yielded 38,559 pounds per acre, while 'Vanessa' and 'Petite Treat' yielded 28,004 and 25,654 pounds per acre, respectively. Since there was less than a 12,145 difference between 'Valdoria' and 'Vanessa', there is no statistical difference between these two varieties. However, the yield difference between 'Valdoria' and 'Petite Treat' was 12,905, 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 29.

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, availability 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.

For information on current recommended production practices, go to http://www.aces.edu/dept/com_veg.

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	Wynnville 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

Experimental Cantaloupe Varieties Compared to Market Standard

Joe Kemble, Edgar Vinson, and Jason Burkett

A small melon trial was conducted at the E.V. Smith Research Center (EVSRC) in Shorter, 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 (see http://www.aces.edu/counties/).

Cantaloupe varieties were direct-seeded on May 19 into 30 foot rows with 6 feet between rows and a within row spacing of 1.5 feet. Drip irrigation and black plastic mulch were used.

Melons were harvested seven times at the half slip stage of maturity from July 25 through August 8 (Table 3).

ACX 4757 produced significantly higher marketable yields than all other melon varieties. The experimental variety 39446-1566 produced yields that were similar to 'Minerva' and 'Orange Star' but higher than 'Athena', 'Aphrodite', and the remaining experimental varieties. With the exception of 39445-1534, the experimental melon varieties lacked uniformity in size, shape, and texture. Experimental varieties could be represented by melons having different rind patterns, shapes, and sizes.

Table 1. Ratings of the 2005 Canteloupe Variety Trial[1]

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

[1] See introduction for description of ratings scales

For commercial cantaloupe production, individual fruit weight should be 4 to 6 pounds. Larger fruit are generally sold at road side markets. At 6 pounds per melon, melons produced by 'Athena' were within the recommended commercial weight range. 'Aphrodite' was the largest melon averaging 9.5 pounds per melon.

Sweetness was measured at harvest using a handheld digital refractometer. Cantaloupes with soluble solids reading below 10° brix do not taste sweet. 'Minerva' (a larger version of 'Athena') and 'Athena' had the highest brix readings at 12.1 and 11.7, respectively.

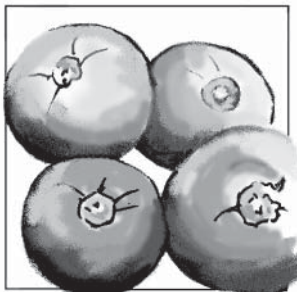
Table 2. Seed Source, Fruit Characteristics, and Relative Earliness of Selected Cantaloupe Varieties

Variety	Type[1]	Seed source	Rind aspect[2]	Flesh color[3]	Days to harvest	Disease claims[4]	Years evaluated
ACX 4757	F1	Abbott & Cobb	E	O	—	—	2003-2005
Aphrodite (RML 8793)	F1	Seedway/Novartis	E	O	—	—	2002-2005
Athena[4]	F1	Seedway/Novartis	E	O	80	FW,PM	1994-2005
Minerva (RML 6969)	F1	Seedway/Novartis	E	O	77	FW,PM	2001-2005
39441-1456	F1	Sakata	E	O	—	—	2005
39442-1458	F1	Sakata	E	O	—	—	2005
39443-1480	F1	Sakata	E	O	—	—	2005
39444-1510	F1	Sakata	E	O	—	—	2005
39445-1534	F1	Sakata	E	O	—	—	2005
39446-1566	F1	Sakata	E	O	—	—	2005

[1] Type: F1 = Hybrid; [2] Rind Aspect: E = Eastern; [3] Flesh color: O = Orange; [4] Disease claims: FW = Fusarium Wilt, PM = Powdery Mildew; [4]Not sensitive to sulfur; — = not found, from seed catalog.

Table 3. Yield of Selected Eastern Cantaloupe Varieties

Variety	Marketable yield *lbs/a*	Marketable fruit *no/a*	Cull weight *lbs/a*	Individual fruit weight *lbs*	Soluble solids *brix*
ACX 4757	37,481	5,082	710	7.4	10.5
Minerva	23,153	2,723	799	8.3	12.1
39446-1566	19,942	2,541	532	7.9	11.1
Orange Star	18,674	3,267	1,863	5.7	11.0
39444-1510	17,756	2,581	1,065	6.9	10.5
39443-1480	13,403	2,057	532	7.6	10.0
Athena	13,130	2,178	0	6.0	11.7
39442-1458	11,890	1,452	532	8.3	9.3
Aphrodite	8,279	887	532	9.5	10.4
39441-1456	7,420	908	1,331	9.2	10.3
39445-1534	2,782	363	532	7.8	11.3
r2	***0.71***	***0.73***	***0.65***	***0.52***	***0.60***
CV	***40***	***38***	***60***	***17***	***7***
LSD	***9,723***	***1,275***	***934***	***1.9***	***0.79***



Beefsteak and Cluster Tomato Varieties Included in Greenhouse Trial

Joe Kemble, Edgar Vinson, and Jane Hoehaver

A greenhouse tomato variety trial was conducted at the Plant Science Research Center (PSRC) on the campus of Auburn University (Table 1). Six-week-old tomato transplants were planted on February 10, 2005 into 2 cubic feet polyethylene bags filled with pine bark. There were two plants per bag and six plants per plot. Each variety was replicated four times.

Tomato plants were irrigated using drip emitters with two emitters per bag. Irrigation was controlled by an electronic timer. During each watering, fertilizer stock solution was injected into the irrigation system using an injector. Fertilizer stock was prepared and applied according to the Greenhouse Tomato Guide published through Mississippi State Extension Service (publication 1828). For more information concerning the greenhouse tomato guide and other information concerning greenhouse tomato production, go to www.ext.msstate.edu.

Tomatoes were harvested, weighed, and graded 17 times between April 27 and July 7. 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 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 extra-large, large, and medium grades (Table 3).

In the beefsteak category, there were no significant differences found among varieties in total yield or total marketable number (Table 2). 'Geronimo' produced a higher yield of extra large fruit than 'Trust' and 'Match'. Extra large yields of 'Geronimo' were similar to DWR 7106 and 'Matrix'. 'Geronimo' also produced the lowest yield of large fruit (with the exception of 'Matrix') and medium fruit. There were no significant differences found in small fruit, russeted skin or zipper scar (Table 3). 'Geronimo' had the lowest weight per plot of fruit affected by radial cracking. DWR 7106 and 'Geronimo' also had the lowest weight per plot of fruit affected by cat-facing.

In the cluster category, there were no significant differences among varieties in marketable yield and marketable cluster number (Table 2). 'Clarance' and 'Tradiro' had significantly higher individual cluster weights than 72-459RZ. 'Clarance' had the highest weight per plot of russeted fruit followed by 'Tradiro' and 72-459RZ, respectively (Table 3). No differences were found in any of the other cull categories.

Table 1. 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	Years evaluated
Clarance	F1/Cluster	Paramount	Indet.	Red	—	—	2005
DWR 7106	F1/Beefsteak	Paramount	Indet.	Red	—	—	2005
Geronimo	F1/Beefsteak	Paramount	Indet.	Red	—	—	2005
Match	F1/Beefsteak	Paramount	Indet.	Red	—	—	2005
Matrix	F1/Beefsteak	Paramount	Indet.	Red	—	—	2005
Tradiro	F1/Cluster	Paramount	Indet.	Red	—	—	2005
Trust	F1/Beefsteak	Paramount	Indet.	Red	—	—	2005
72-459RZ	F1/Cluster	Paramount	Indet.	Red	—	—	2005

[1] Type: F1 = Hybrid. [2] Plant habit: Indet. = Indeterminate; — = not found, from seed catalog.

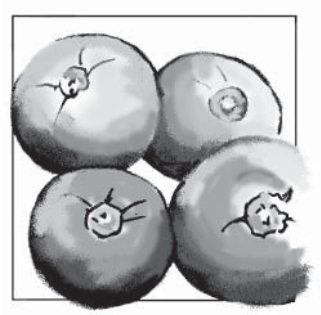
Table 2. Yield of Greenhouse Tomatoes from a Winter 2005 Variety Trial, Plant Sciences Research Center

Variety	Total marketable yield[1] *no/plot*	Total marketable yield *lbs/plot*	Extra large yield *lbs/plot*	Large yield *lbs/plot*	Medium yield *lbs/plot*	Individual fruit weight *lb*
Beefsteak Tomatoes						
Trust	154	39	19	13	7	0.30
Geronimo	137	39	28	8	3	0.31
Match	130	35	16	12	7	0.31
DWR 7106	117	42	23	14	5	0.36
Matrix	103	38	25	8	5	0.37
r2	***0.11***	***0.22***	***0.50***	***0.70***	***0.60***	***0.13***
CV	***49***	***14***	***23***	***18***	***25***	***26***
LSD	***89***	***8.1***	***7.8***	***3.0***	***2.0***	***0.13***
Cluster Tomatoes						
	Marketable yield[1] *lbs/plot*	Marketable clusters *no/plot*	Individual cluster weight *lbs*			
Clarance	34	30	1.15			
Tradiro	28	30	0.93			
72-459RZ	30	28	1.08			
r2	***0.04***	***0.30***	***0.60***			
CV	***22***	***17***	***9***			
LSD	***10***	***8***	***0.14***			

[1] Yields are based on six-plant plots.

Table 3. Cull Production of Selected Beefsteak and Cluster Tomato Varieties

Variety	Small yield *lbs/plot*	Russeted skin *lbs/plot*	Zipper scar *lbs/plot*	Concentric cracking *lbs/plot*	Radial cracking *lbs/plot*	Cat facing *lbs/plot*	Blossom end rot *lbs/plot*
Beefsteak Tomatoes							
Match	1.35	2.90	0.34	2.19	3.97	0.87	0.78
Geronimo	1.61	2.03	0.61	1.23	0.47	0.22	1.61
Trust	0.91	1.40	0.34	2.19	6.83	0.31	0.29
DWR 7106	1.19	2.30	•	1.38	1.31	0.01	0.63
Matrix	1.52	2.70	0.60	1.29	0.97	0.18	1.29
r2	***0.15***	***0.17***	***0.96***		***0.45***	***0.80***	***0.30***
CV	***51***	***60***	***10***		***92***	***52***	***94***
LSD	***1.01***	***2.04***	***0.25***		***6.01***	***0.59***	***1.5***
Cluster Tomatoes							
Clarance	0.38	4.3	•	1.5	1.75	•	4.00
Tradiro	1.01	1.0	•	•	3.0	•	4.00
72-459RZ	1.66	2.0	•	1.0	3.0	•	2.33
r2	***0.32***	***0.40***			***0.34***		***0.13***
CV	***62***	***95***			***43***		***74***
LSD	***1.30***	***0.02***			***1.80***		***2.76***



Tomato Varieties Produce Higher Early Yields

Joe Kemble, Edgar Vinson, and Arnold Caylor

A spring tomato variety trial was conducted at the North Alabama Horticulture Research Center (NAHRC) in Cullman, Alabama (Tables 1 and 2). On May 8, six-week-old tomato transplants were set into 20-foot-long plots, at a within row spacing of 1.5 feet. Silver plastic mulch and drip irrigation were used.

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 (see http://www.aces.edu/counties/).

At NAHRC, preplant fertilization consisted of 80 pounds per acre of N as ammonium nitrate. Fertilization consisted of weekly injections of ammonium nitrate at a rate of 10 pounds of N per acre. Pesticides were applied weekly.

Tomatoes were harvested, weighed, and graded weekly between July 18 and August 29. 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 extra-large, large and medium grades (Table 3).

Table 1. Ratings of the 2005 Tomato Variety Trial[1]

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

[1] See introduction for description of ratings scales

Early marketable yield was significantly higher for 'Amelia' and BHN 640 when compared to the market standard 'Florida 47' and all other varieties (Table 3). Marketable fruit number for these varieties were also significantly higher. In total yield, 'Amelia' and BHN 640 were significantly higher than 'Leila', 'Mountain Crest', and 'Biltmore' (Table 4). 'Amelia' and BHN 640 were similar to all others.

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	—	**FW,TSWV,VW	2003-2005
BHN 640	F1/FM	BHN	Det.	Red	75	**FW,TSWV,VW	2003-2005
Biltmore	F1/FM	Harris Moran	Det.	Red	75	ASC,FW,St VW	2005
Florida 47	F1/FM	Seminis	Det.	Red	75	ASC,FW,St,VW	1997-1999, 2002-2005
Sebring	F1/FM	Novartis	Det.	Red	75	FCR,**FW,St,VW	2004,2005
Soraya	F1/FM	Rogers	Det.	Red	—	FCR,**FW, St	2005
Leila	F1/FM	Rogers	Det.	Red	—	VW, FW*, St	2004,2005
Mountain Crest	F1/FM	Sun Seeds	Det.	Red	75	*FW,VW	2004,2005

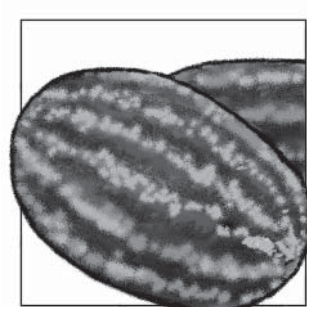
[1] Type: F1 = Hybrid, FM = Fresh market; [2] Plant habit: Det. = Determinate; [3] Disease claims: FCR = Fusarium Crown Rot; FW = Fusarium Wilt; VW = Verticillium Wilt; ASC = Alternaria Stem Canker; St = Stemphylium (grey leaf spot), TSWV = Tomato Spotted Wilt Virus; * = Races 1 and 2; ** = Races 1,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

Table 3. Early Yield of Selected Tomato Varieties, North Alabama Horticulture Research Center

Variety	Marketable yield *lbs/a*	Marketable number *no/a*	Extra large yield *lbs/a*	Large yieled *lbs/a*	Medium yield *lbs/a*	Cull weight *lbs/a*	Individual fruit weight *lb*
Amelia	29,482	47,735	5,896	14,092	9,494	4,599	0.63
BHN 640	19,701	41,927	263	5,815	13,754	6,264	0.50
Mountain Crest	11,616	24,956	800	3,028	7,788	5,322	0.47
Florida 47	11,849	23,777	864	4,078	7,339	4,716	0.50
Sebring	9,431	19,148	630	2,849	6,267	1,973	0.50
Leila	9,756	18,695	1,100	3,918	5,013	3,519	0.52
Soraya	6,825	14,248	254	1,997	4,764	3,022	0.46
Biltmore	6,530	11,979	597	2,523	3,410	2,397	0.55
r2	***0.80***	***0.74***	***0.90***	***0.74***	***0.65***	***0.53***	***0.64***
CV	***34***	***52***	***62***	***52***	***36***	***38***	***9***
LSD	***4,385***	***8,726***	***1,038***	***1,040***	***2,541***	***1,466***	***0.06***

Table 4. Total Yield of Selected Tomato Varieties, North Alabama Horticulture Research Center

Variety	Marketable yield *lbs/a*	Marketable number *no/a*	Extra large yield *lbs/a*	Large yieled *lbs/a*	Medium yield *lbs/a*	Cull weight *lbs/a*	Individual fruit weight *lb*
Amelia	73,397	123,783	13,966	32,852	26,579	28,606	0.60
Sebring	63,952	124,621	4,787	25,318	33,847	40,339	0.51
BHN 640	61,536	123,609	5,211	19,680	36,645	53,099	0.50
Florida 47	60,022	108,410	8,063	26,388	25,571	35,584	0.56
Soraya	59,884	110,058	7,844	25,697	26,343	39,935	0.55
Leila	52,233	94,032	6,762	22,190	23,281	31,051	0.56
Mountain Crest	50,620	100,298	5,122	16,316	29,182	60,881	0.50
Biltmore	48,078	81,876	10,691	19,765	17,621	29,114	0.58
r2	***0.30***	***0.30***	***0.44***	***0.40***	***0.45***	***0.73***	***0.55***
CV	***24***	***24***	***50***	***30***	***26***	***19***	***7***
LSD	***13,552***	***24,926***	***3,775***	***6,873***	***6,849***	***7,405***	***0.05***



Seedless Watermelon Trials in Central and North Alabama

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

A seedless watermelon trial was conducted at the E.V. Smith Research Center in Shorter, Alabama, and the North Alabama Horticulture Substation (NAHRC) in Cullman, Alabama (Tables 1 and 2).

Four-week-old seedless watermelon transplants were set on July 6 at E.V. Smith and on May 5 at NAHRC. Seedless watermelons should be transplanted rather than direct seeded because of the low germination rate of seedless watermelons. Seedless watermelons must be planted with a seeded variety to serve as a source of pollen. At both locations one pollenizer, '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 (see 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 April 27. After planting, calcium nitrate was injected weekly at a rate of 40 pounds per acre from May 20 to July 22. At EVSRC, fertilization consisted a preplant application of calcium nitrate at a rate of 387 pounds per acre. After planting, 20-20-20 was injected at a rate of 20 pounds per acre one to two times per week from July 19 through September 16.

Watermelons were harvested on September 13 and 20 at EVSRC and on July 25 and 29 at NAHRC,

Table 1. Ratings of the 2005 Seedless Watermelon Variety Trial[1]

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

[1] See introduction for description of ratings scales

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
ACX651T	Seminis	Oblong	Red	—	—	2005
Cominskey	Seminis	Round	Red	—	—	2005
Constitution	Seedway	Blocky	Red	87	ANT,FW	2002-2004
Cooperstown	Seminis	Oval	Red	85	ANT,FW	2005
Freedom	Sunseeds	Blocky	Red	87	FW*	2002-2004
Liberty	Sunseeds	Oval	Red	85	—	2004
Millennium	Harris Moran	Round	Red	78	—	2004
PX803010	Seminis	Elongated	Red	—	—	2005
Revolution	Sunseeds	Blocky	Red	83	FW*	2002-2004
RWT 8145	Syngenta	Blocky	Red	—	—	2005
Sweet Delight	Syngenta	Round	Red	—	—	2005
SWT 8706	Sakata	Round	Red	—	—	2005
Taladega	Sakata	Elongated	Red	—	—	2005
Triple Crown	Seedway	Oblong	Red	85	—	2004
Tri-X-313	Syngenta	Oval	Red	—	—	1996-1998, 2003,2005
Variety 5244	Abbott and Cobb	Oblong	Red	90	—	2005
Variety 5544	Abbott and Cobb	Oblong	Red	90	—	2005
Variety 7167	Abbott and Cobb	Oval	Red	—	—	2005
5335	Seminis	Oval	Red	—	—	2005
8133	Seminis	Oval	Red	—	—	2005

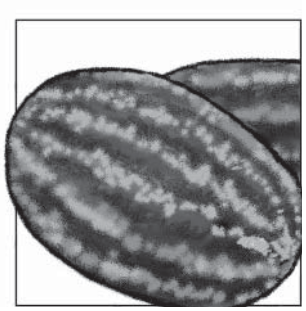
were graded according to the Watermelon Grader's Guide (Circular ANR-681 from the Alabama Cooperative Extension System), and marketable yield was determined (Table 3). Two melons from each plot were used to measure soluble solids (sweetness), hollow heart, and rind thickness. A hand-held refractometer was used to measure soluble solids.

The varieties 'Millennium' and 'Revolution' were compared to a group of watermelon varieties at EVSRC and another group at NAHRC. At EVSRC, 'Millennium' and 'Revolution' topped the list in total marketable yield though there were no significant differences found among varieties. The experimental variety PX803010 had soluble solids readings that were significantly higher than 'Sweet Delight', Tri-X-313, RWT 8145, 8133, and 'Cooperstown'. At NAHRC, 'Millennium' topped the list again in total yield though there were no significant differences found among varieties. In total marketable fruit number, 'Millennium' was significantly higher than all other varieties with the exception of ACX 651T.

Table 3. Yield and Quality of Selected Seedless Watermelon Varieties

Variety	Marketable yield *lbs/a*	Marketable fruits *no/a*	Individual fruit weight *lbs/a*	Hollow heart *in*	Rind thickness *cm*	Soluble solids *brix*
E. V. Smith Research and Extension Center						
Millennium	39,709	2,299	15.35	4.05	0.36	12.73
Revolution	39,242	3,267	12.14	4.70	0.39	12.19
PX803010	35,943	2,904	13.00	4.00	0.51	12.78
Cominskey	32,900	2,904	11.72	2.60	0.33	12.24
Sweet Delight	31,934	2,783	11.93	1.50	0.40	11.45
5335	27,744	2,662	10.30	0.80	0.54	12.40
Tri-x-313	26,872	2,420	11.02	4.13	0.35	12.13
RWT 8145	22,727	2,057	10.76	4.40	0.51	11.53
8133	19,892	1,613	11.57	3.60	0.31	11.95
Cooperstown	18,561	1,452	12.38	2.80	0.75	11.83
r2	***0.20***	***0.21***	***0.22***	***0.30***		***0.31***
CV	***58***	***50***	***25***	***82***		***6***
LSD	***25,823***	***1,796***	***4***	***3.5***		***1.13***
North Alabama Horticulture Research Center						
Millennium	74,819	5,410	14.21	•	—	11.9
ACX651T	56,163	3,478	16.26	•	—	8.9
Constitution	55,577	3,419	16.27	•	—	11.3
SWT 8706	55,473	2,761	19.93	•	—	10.4
AC651T	53,441	3,248	16.45	•	—	9.2
Revolution	52,367	2,778	18.54	•	—	11.9
Variety 5244	43,554	2,759	16.25	•	—	10.7
Variety 5544	41,445	2,326	17.83	•	—	10.7
Variety 7167	40,887	2,766	15.07	0.50	—	10.1
Taladega	37,525	2,632	13.29	0.50	—	11.3
Freedom	35,621	1,994	17.78	0.25	—	12.0
Liberty	31,949	2,361	12.69	•	—	10.7
Triple Crown	30,843	1,928	16.27	•	—	11.3
r2	***0.47***	***0.48***	***0.35***			***0.63***
CV	***46***	***50***	***20***			***7***
LSD	***46,630***	***1,913***	***11.06***			***1.1***

• = none; — = no data.



Personal Size Watermelon Trial in Central Alabama

Joe Kemble, Edgar Vinson, and Jason Burkett

A seedless watermelon trial was conducted at the E.V. Smith Research Center in Shorter, Alabama (Tables 1 and 2).

Four- week- old personal watermelon transplants were set on June 3. Personal melons are also seedless so they were transplanted rather than direct seeded because of the low germination rate of seedless watermelons. A personal size seeded variety, 'Jenny' was used as a pollinator. One pollinator was planted for every three seedless transplants to insure proper pollenation. Drip irrigation and black plastic mulch were used.

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 (see http://www.aces.edu/counties/).

Watermelons were harvested on July 29, August 9, August 16, and August 23 at EVSRC and were graded according to the Watermelon Grader's Guide (Circular ANR-681 from the Alabama Cooperative Extension System) and marketable yield was determined. Two melons from each plot were used to measure soluble solids (sweetness), hollow heart, and rind thickness. A hand-held digital refractometer was used to measure soluble solids.

Table 1. Ratings of the 2005 Personal Size Watermelon Variety Trial[1]

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

[1] See introduction for description of ratings scales

The main attribute of the personal size melons is their small size. Although their size should be similar to a cantaloupe, personal melons ideally weigh 4 to 6 pounds. They should be no less than 3 pounds and no more than 9 pounds. 'Demi-Sweet' had the highest individual fruit weight of 9.9 pounds per melon, followed by 'Mini Yellow' at 8.03 pounds per melon and 'Valdoria' at 7.86 pounds per melon. The melons that were closest to ideal weight were 'Wonder', 'Solitaire', and 'Vanessa'.

In total marketable yield, 'Valdoria', 'Demi Sweet', 'Mini Yellow', and 'Vanessa' had significantly higher yields than all other melons. Market fruit number per acre was also statistically similar among these four varieties.

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

Variety	Seed source	Rind aspect[1]	Fruit shape	Flesh color	Days to harvest	Disease claims	Years evaluated
Betsy	Nunhems	DGS-LB	Round	Red	—	—	2005
Bobbie	Nunhems	DGS-LB	Round	Red	—	—	2005
Demi-Sweet	Del Sol	DG	Round	Red	—	—	2005
Extasy	Seminis	DG	Round	Red	—	—	2005
Mini Yellow	Palmer Seeds	DG	Round	Yellow	—	—	2005
Petite Treat	Del Sol	DGS-LB	Round	Red	—	—	2005
Solitaire	Seminis	DGS-LB	Round	Red	—	—	2005
Valdoria	Nunhems	DG	Round	Red	—	—	2005
Vanessa	Nunhems	DG	Round	Red	—	—	2005
Wonder	Seminis	DG	Round	Red	—	—	2005

[1] Rind Aspect: DGS = Dark green stripe, DG = Dark Green, LB = Light Background; — = not available, from seed catalogs.

Table 3. Yield and Quality of Selected Personal Size Watermelon Varieties

Variety	Marketable yield *lbs/a*	Marketable fruits *no/a*	Individual fruit weight *lbs/a*	Soluble solids *brix*	Hollow heart *in*	Rind thickness *in*
Valdoria	38,559	4,901	7.86	11.52	0.53	0.67
Demi Sweet	36,278	3,630	9.99	10.91	2.81	0.83
Mini Yellow	30,619	3,812	8.03	11.41	1.49	0.36
Vanessa	28,004	4,114	6.81	11.69	2.83	0.54
Petite Treat	25,654	3,267	7.85	11.47	2.94	0.65
Extazy	24,917	3,207	7.76	11.50	0.00	0.75
Wonder	23,971	3,570	6.71	11.19	1.19	0.68
Solitaire	22,015	3,146	6.99	11.96	0.00	0.73
Bobbie	19,516	2,481	7.86	11.91	1.21	0.78
Betsy	17,270	2,420	7.14	11.25	1.00	0.81
r2	***0.50***	***0.30***	***0.52***	***0.23***	***0.50***	***0.60***
CV	***31***	***36***	***14***	***6***	***99***	***21***
LSD	***12,145***	***1,838***	***0.71***	***1.16***	***0.59***	***0.60***

Conqueror III Summer Squash Produces Highest Yields in Central Alabma

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

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. For current recommendations for pest and weed control in vegetable production in Alabama, consult your county Extension agent (see 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 18 at EVSRC and on silver plastic mulch on April 26 at BARU. Beds were 20 feet long on 5-foot centers at BARU and 20 feet long on 6-foot centers at EVSRC. Spacing within a row was 1.5 feet at both locations.

Squash were harvested 13 times from June 29 through July 29 at EVSRC and from June 6 through June 17 at BARU. 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 2005 Summer Squash Variety Trial[1]

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

[1] See introduction for description of ratings scales

At EVSRC, 'Conqueror III' produced yields that were similar to 'Lioness', 'Genry', and 'Prelude II' in early yield but had a significantly higher total yield than all other varieties. At BARU, there were no significant differences in yield.

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	2005
Destiny III	F1	Seminis	41	CMV,WMV,ZYMV	1997-2001, 2004,2005
Fortune*	F1	Novartis	39	—	1999,2004,2005
Gentry	F1	Novartis	43	—	1995-1999, 2002-2005
Horn of Plenty	F1	Hollar	—	—	1998,2002, 2004,2005
Lioness	F1	Harris Moran	—	CMV,WMV,ZYMV	2004,2005
Medallion	F1	A&C	53	—	1896,2002, 2003,2005
Prelude II	F1	Seminis	40	PM,WMV,ZYMV	1997-2001, 2003-2005

[1] Type: F1 = Hybrid; [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.

Table 3. Early and Total Yield of Selected Summer Squash Varieties

Variety	Early Marketable yield *lbs/a*	Total Marketable yield *lbs/a*	Cull weight *lbs/a*	Individual fruit weight *lbs*
Early Yield: E.V. Smith Research Center				
Conqueror III	1,312			
Lioness	1,016			
Gentry	994			
Prelude II	939			
Fortune	903			
Destiny III	896			
Medallion	836			
Horn of Plenty	761			
r2	***0.32***			
CV	***27***			
LSD	***383***			
Total Yield: E.V. Smith Research Center				
Conqueror III		7,981	8,202	0.15
Prelude III		6,048	7,384	0.10
Fortune		5,427	8,018	0.12
Destiny III		5,074	4,710	0.11
Lioness		5,025	6,537	0.14
Medallion		5,022	7,847	0.10
Gentry		5,006	8,748	0.11
Horn of Plenty		4,208	8,995	0.11
r2		***0.74***	***0.55***	***0.92***
CV		***13***	***18***	***5***
LSD		***1,073***	***1,977***	***0.01***
Total Yield: Brewton Agricultural Research Unit				
Destiny III		11,079	9,635	0.24
Lioness		11,000	3,229	0.25
Conqueror III		10,527	2,941	0.19
Prelude III		10,136	2,457	0.25
Gentry		9,868	2,555	0.24
Medallion		9,843	3,090	0.21
Horn of Plenty		9,267	3,559	0.23
Fortune		9,195	3,071	0.22
r2		***0.20***	***0.30***	***0.30***
CV		***16***	***107***	***16***
LSD		***2,403***	***5,963***	***0.053***

2005 Vidalia Onion Variety Trial

George Boyhan, Reid Torrance, Chris Hopkins, Randy Hill, and Thad Paulk

Each year for the past several years onion variety trials have been conducted to assess the performance of onions in the Vidalia onion growing area of southeast Georgia (Table 1). These trials assess entries for total yield, graded yield, number of doubled onions, seedstems, disease incidence, harvest date, pyruvate, and percent sugar. These trials are used in part to determine the suitability of varieties for inclusion on the Georgia Department of Agriculture's official list of Vidalia onions.

These trials include a broad spectrum of short-day Granex type onions available for production in the Vidalia growing district covering a full range of maturity classes. Although these onions are being assessed for production in the Vidalia region, they can be grown in many parts of the South. Ideal conditions would include a loam or sandy loam soil, irrigation, and temperatures that do not drop below 10°F. Areas with heavier clay soils may find these onions taste hotter due to increased soil sulfur levels. Irrigation is important to onion size and also affects mildness. Overwintering onions can withstand temperatures into the teens particularly if transplanted, but temperatures below this will result in stand loss.

Onions were grown following University of Georgia Cooperative Extension Service recommendations for fertility, as well as for disease, insect, and weed control. These onions were grown as a transplanted crop with onion seed sown in high density (30 to 70 seed per linear foot) plantings on September 21, 2004. Four rows were sown on beds prepared 6 feet on-centers. These plants were pulled, 50 percent of their tops removed, and reset to their final spacing on November 29 and 30, 2004. The final spacing was 12 inches between-rows and 5.5 inches in-row on beds prepared with 6 foot centers. Four rows were planted per bed.

The experiment was arranged as a randomized complete block design with four replications. Each plot or experimental unit was 35 feet of planted bed. There was a 5 foot in-row buffer between plots. The number of seedstems (flowering plants) and the number of plants that had more than one bulb (doubles) were counted for the entire 35 foot plot on April 11, 2005. In addition, the number of plants infected with center rot *(Pantoea ananatis)* were counted for each plot on April 20, 2005.

Table 1. Ratings of the 2005 Vidalia Onion Trial[1]

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)	0.16-0.15

[1] See introduction for description of ratings scales

Twenty-five feet of each plot was harvested when the onions were judged mature. After removal of the tops and roots, the onions from each plot were immediately weighed. Onions were harvested on April 25, May 2, May 9, May 16, and May 23, 2005. Onions harvested on the first two harvests were heat cured for 24 hours while the later harvests were not subject to heat curing to minimize the effects of warm weather bacterial diseases. Onions were then graded into size classes of jumbos (greater than 3 inches) or mediums (greater than 2 inches and less than 3 inches) and these weights recorded.

A ten-bulb sample from each plot was sent to National Labs, Collins, Georgia, for analyses of pyruvate and percent sugar. Pyruvate analysis is an indicator of onion pugency and is measured as micromoles/gram fresh weight of onion tissue.

Nine companies submitted onion seed for evaluation in the trial. Florida Seed had the fewest number of entries with two while Dessert Seed and Seminis Seed had the most with eight entries. This year with 49 entries was the largest trial held to date.

It is desirable to have a single bulb produced per plant with dry bulb onion production, but this is not always the case. For a number of environmental and physiological reasons onion bulbs will often split forming two or more bulbs. Variety in conjunction with environmen-

tal conditions plays a role in double formation. This year the number of doubles ranged from 0 for variety 1200 to 118 for 'Southern Belle'(Table 2). Both 'Sweet Advantage' and 'Southern Belle' had about one-third of their onions double. 'Sweet Melody', WI-129, WI-3115, and 'Nirvana' also had high incidence of doubles with about 20 percent doubling.

Seedstems or flowering in onions is also undesirable. Under normal conditions onions are biennial, forming a bulb the first year, in which energy is stored to produce a flower or scape the second year. This can be short-circuited, however, if the plant has reached sufficient biomass (about the 10-leaf stage) followed by cool temperatures. These conditions can occur in southeast Georgia during early spring resulting in large numbers of seedstems. It is also known that variety plays an important role in seedstem formation. In some years there can be many seedstems across most varieties while in other years only a few varieties will exhibit this trait.

The 2004-05 season had few seedstems across most varieties. 'Sweet Vidalia' had the most with an average of 20 seedstems per plot. Along with 'Sweet Vidalia' variety SSC 6372 F1 also had a relatively high number of seedstems with 17. Compared to the previous year, this was a

Table 2. Incidence of Doubles, Seedstems, and Center Rot in Vidalia Onion Varieties

Variety	Company	Doubles *no/plot*	Seedstems *no/plot*	Center rot incidence *avg. no./plot*
1200	Nunhems	0	0	1.1
Var. No. 105101	Dessert Seed LLC	1	3	2.1
Pegasus	Seminis	2	1	0.6
Serengeti 1202	Nunhems	2	0	1.2
Gobi 1201	Nunhems	3	0	3.7
Var. No. 15085	Dessert Seed LLC	3	3	0.4
Var. No. 114101	Dessert Seed LLC	4	4	1.1
Var. No. 34140	Dessert Seed LLC	4	1	0.2
Savannah Sweet	Seminis	4	3	0.9
Granex Yellow PRR	Seminis	4	2	0.9
Sweet Jasper (XON-202Y)	Sakata Seed	6	3	0.4
Var. No. 128101	Dessert Seed LLC	6	7	1.2
XON-403Y	Sakata Seed	6	0	0.4
EX 07542007	Seminis	7	0	0.6
Var. No. 15094	Dessert Seed LLC	8	11	0.6
Century	Seminis	9	1	2.7
Var. No. 108101	Dessert Seed LLC	10	1	0.8
XON-204Y	Sakata Seed	10	0	0.7
SR1001	Nunhems	10	1	1.2
Mr. Buck	D. Palmer Seed	11	4	1.9
HSX-61304 F-1	Hortag Seed	11	9	3.3
WI-131	Wannamaker Seeds	14	2	0.8
Candy	Seminis	15	0	1.7
HSX-19406 F-1	Hortag Seed	16	10	2.1
FS 2011	Florida Seed	17	1	2.3
XON 303Y	Sakata Seed	19	0	0.2
Granex 33	Seminis	20	3	1.9
Var. No. 15082	Dessert Seed LLC	21	1	1.7
Georgia Boy	D. Palmer Seed	23	3	1.1
33076	Shamrock Seed Co.	26	2	1.9
SSC-1535	Shamrock Seed Co.	27	1	1.1
Sugar Belle (SSC 6371 F1)	Shamrock Seed Co.	30	2	0.4
SSC 6372 F1	Shamrock Seed Co.	31	17	2.6
Sweet Vidalia	Nunhems	34	20	1.2
EX 07542008	Seminis	34	0	2.8
HSX-18201 F-1	Hortag Seed	35	7	2.6
FS 2005	Florida Seed	36	2	0.9
WI-102	Wannamaker Seeds	36	1	1.5
WI-609	Wannamaker Seeds	36	4	0.4
Ohoopee Sweet	D. Palmer Seed	38	0	1.9
SSC-1600	Shamrock Seed Co.	38	1	0.6
Sapelo Sweet	D. Palmer Seed	42	3	0.4
DPS 1290	D. Palmer Seed	43	7	0.2
Sweet Melody	Nunhems	59	6	0.6
WI-129	Wannamaker Seeds	62	3	0.7
WI-3115	Wannamaker Seeds	65	4	1.1
Nirvana	Nunhems	68	1	1.3
Sweet Advantage	D. Palmer Seed	102	1	0.0
Southern Belle	D. Palmer Seed	118	4	1.5
CV		***18%***	***33%***	***38%***
LSD (p=0.05)		***2***	***1***	***0.3***

Table 3. Yield, Graded Yield, and Harvest Date of Vidalia Onion Varieties

Variety	Field yield *50-lb bags/a*	Jumbos *40-lb boxes/a*	Mediums *40-lb boxes/a*	Harvest date
33076	1096	1214	37	4/25/05
WI-3115	1190	1179	39	4/25/05
WI-131	1093	1178	30	4/25/05
WI-129	1175	1162	46	4/25/05
1200	1032	1141	12	5/9/05
FS 2011	1054	1123	31	4/25/05
WI-609	1060	1093	33	4/25/05
XON-204Y	1114	1057	25	5/9/05
WI-102	1208	1052	46	4/25/05
SSC-1535	917	1000	50	4/25/05
Serengeti 1202	802	942	40	5/9/05
XON 303Y	887	933	50	5/16/05
FS 2005	995	929	44	4/25/05
DPS 1290	1035	911	64	5/16/05
XON-403Y	1128	882	36	5/16/05
Sugar Belle (SSC 6371 F1)	903	868	75	4/25/05
Var. No. 108101	927	833	30	5/16/05
Georgia Boy	848	815	58	5/9/05
Savannah Sweet	858	812	38	5/16/05
EX 07542007	836	810	34	5/9/05
SR1001	1233	795	24	5/16/05
Century	969	790	30	5/16/05
Var. No. 15082	942	769	34	5/16/05
SSC 6372 F1	795	756	125	5/2/05
Sweet Vidalia	858	743	36	5/9/05
Var. No. 15094	751	731	37	5/16/05
Sapelo Sweet	862	728	61	5/16/05
Mr. Buck	807	720	162	5/9/05
EX 07542008	834	718	69	5/9/05
Granex 33	893	696	58	5/16/05
Sweet Melody	814	694	76	5/9/05
Nirvana	798	691	185	5/2/05
Pegasus	886	689	139	5/23/05
Var. No. 128101	900	689	28	5/16/05
Gobi 1201	894	686	59	5/9/05
Var. No. 15085	765	684	37	5/16/05
SSC-1600	736	681	75	4/25/05
Ohoopee Sweet	755	675	79	5/9/05
Var. No. 105101	637	664	35	5/9/05
HSX-18201 F-1	816	664	81	5/16/05
Candy	689	660	77	5/2/05
Southern Belle	812	621	268	5/2/05
Var. No. 114101	812	608	24	5/23/05
Sweet Jasper (XON-202Y)	749	566	50	5/16/05
Sweet Advantage	727	511	271	5/2/05
Granex Yellow PRR	686	485	42	5/16/05
HSX-19406 F-1	743	484	56	5/16/05
Var. No. 34140	570	481	43	5/16/05
HSX-61304 F-1	882	445	35	5/23/05
CV	***14%***	***17%***	***70%***	
LSD	***230***	***254***	***66***	

relatively light year for seedstems. In the 2003-04 season, seven out of 34 entries had 90 or more seedstems per plot.

Center rot, which can destroy the entire bulb, is a bacterial disease of onions in which the center most recently mature leaf is infected. Relatively warm temperatures during bulb formation favor development of this disease. This is a recently newly described disease in the Vidalia onion area. The incidence of center rot will vary from year to year based on environmental conditions that favor development. The 2004-05 season was a relatively mild year for centerrot incidence. Incidence ranged from 0 to just under four plants per plot infected. Although there were statistical differences in incidence at this low rate, it is unclear if these difference actually represent varietal differences.

Total or field yields ranged from 570 50-pound bags per acre for variety 34140 to 1233 50-pound bags for SR1001 (Table 3). Total yield is a good indicator of the potential for a particular variety, but does not always translate into an overall good variety because of unacceptable losses in the grading process. For a variety to be considered a good yielder it should consistently have high jumbo yields which generally command the highest prices in the market. The jumbo yields in this trial ranged from 445

to 1,214 40-pound boxes per acre. The highest jumbo yielding variety was 33076, which did not differ from the nine other varieties with greater than 1,000 40-pound boxes per acre. Medium yields often are inversely correlated with jumbo yields, whereas as jumbo yields increase medium yields decrease. In other words, poorly performing varieties will often have the highest medium yields.

Harvest date continues to be an important characteristics of tested varieties. All of those varieties harvested on April 25, 2005 would be classed as Japanese overwintering onions. These extra-early varieties remain controversial because of preceived poor taste. The apparent poor taste of these varieties is not universially accepted as such. Neither pyruvate nor taste panel evaluations have consistently indicated these varieties have poor taste parameters, yet the preceived poor quality continues to haunt these varieties. Very late maturing varieties continue to be plagued by late season warm weather bacterial diseases such as sour skin and slippery skin.

Pyruvate analyses ranged from 2.9 to 5.1 um/gfw. Ironically the lowest pyruvate value occurred with variety WI-609, which is one of the early Japanese overwintering types (Table 4). This is indicative of the problem where pyruvate has proven ineffective in discerning differences between these Japanese overwintering onions and other types. The highest valued varieties did not differ statistically from half of the listed varieties. Three-quarters of the entries did not differ as to sugar content, which ranged from 7.8 to 12.3 percent. Even among those entries with statistically lower sugar content, their content was acceptionally high. Generally sugar content in short-day onions ranges from 6 to 8 percent.

In conclusion, these trials continue to provide important information to growers about the performance of Vidalia onion varieties. When examined over several years, these trials provide important yield and quality information growers can use in making variety selections.

Table 4. Pyruvate and Sugar Content of Vidalia Onion Varieties

Variety	Pyruvate *um/gfw*	Sugar %
WI-609	2.9	8.1
Candy	3.0	9.2
Serengeti 1202	3.0	9.6
Var. No. 128101	3.1	9.7
Savannah Sweet	3.1	8.5
FS 2011	3.2	7.8
WI-3115	3.3	8.4
EX 07542007	3.3	9.5
WI-131	3.4	8.3
Var. No. 15094	3.4	9.7
HSX-19406 F-1	3.4	9.1
Century	3.5	9.6
WI-102	3.5	8.8
Sweet Jasper (XON-202Y)	3.5	9.8
33076	3.5	8.7
Sugar Belle (SSC 6371 F1)	3.5	9.6
SSC 6372 F1	3.5	11.2
Pegasus	3.6	9.6
SSC-1535	3.6	9.0
FS 2005	3.6	8.8
SR1001	3.6	9.6
Var. No. 114101	3.6	9.0
Var. No. 34140	3.7	9.5
Var. No. 105101	3.7	10.0
DPS 1290	3.7	9.5
Sweet Melody	3.8	10.1
Southern Belle	3.8	10.6
Sweet Vidalia	3.8	10.1
Gobi 1201	3.8	8.7
HSX-18201 F-1	3.8	9.7
SSC-1600	3.8	10.1
Georgia Boy	3.9	9.9
Mr. Buck	3.9	10.0
XON-403Y	3.9	10.4
Var. No. 15085	4.0	11.3
WI-129	4.0	11.1
HSX-61304 F-1	4.0	9.3
Granex 33	4.1	8.8
Var. No. 15082	4.1	9.8
Sapelo Sweet	4.2	10.2
Granex Yellow PRR	4.3	10.1
EX 07542008	4.4	12.3
XON-204Y	4.4	9.9
Sweet Advantage	4.5	11.6
1200	4.6	11.8
Nirvana	4.6	11.5
Ohoopee Sweet	4.8	11.0
Var. No. 108101	5.1	12.2
XON 303Y	5.1	11.5
CV	***19%***	***18%***
LSD	***1.3***	***3.3***

Several Pink-Eye Peas Good for Fresh Harvest in Central Mississippi

W.B. Evans, K.L. Paridon, and P. Hudson

Southernpeas are an important crop to Mississippi vegetable farmers and home gardeners alike. Consumers prefer pink-eye peas. There is less demand for cream peas, and little if any sales of fresh black-eye types. Small growers and homeowners alike prefer the purplehull trait for pod color. Mississippi has both hand-harvested and mechanically harvested commercial southernpea acreage. Much of the mechanically harvested acreage is for frozen or canned product, while the majority of the hand-harvested acreage is used or marketed for fresh consumption without long-term commercial storage. This trial was undertaken to compare yield and quality among southernpeas raised for hand-harvested, fresh sale.

A replicated trial of purple-hull, cream, and black-eye southernpeas for fresh harvest was conducted in central Mississippi at Crystal Springs during the summer of 2005 (Tables 1 and 2). The trial contained sixteen entries from commercial wholesale sources. Plots were arranged in a randomized complete block design with four replications. All plots were single rows, 20 feet long with 30 inches between rows. Plots were seeded with a Gardenway push planter on July 17, 2005. Plots were maintained using standard local practice including pre-emergent herbicide, pre-plant fertilizer based on soil test, and scouting and treating for insect pests. Ten feet from the middle of each plot were flagged and harvested up to three times from early to late September 2005. Pods were hand-harvested into buckets and weighed. After the in-shell weight was determined, pods were left at room temperature for 24 hours before shelling with a mechanical sheller. Seeds were then weighed. Percent shell-out was calculated as the difference between in-shell weight and seed weight, multiplied by 100. To compare relative days to maturity, a weighted average days until middle harvest was calculated by multiplying the seed weight for each plot on each harvest date, summing these numbers across plots, and dividing by the total seed weight across harvest dates (For calculations, see Table 3 footnote). The average of the middle harvest dates calculated for each entry is presented in Table 3.

There was little disease or insect pressure on the plots after an early outbreak of leaf eating insects was controlled at the two-leaf stage. Weeds and disease were not a significant problem. The growing period was drier than average except for one tropical weather event in early September that brought 3 inches of rain with wind. Temperatures were near normal pre-bloom and above normal during pod fill.

Table 1. Ratings of the 2005 Southernpea Variety Trial[1]

Location	Crystal Springs, MS
Weather	4
Fertility	5
Irrigation	4
Pests	4
Overall	4

[1] See introduction for description of ratings scales

Table 2. Seed Source of Selected Southernpea Varieties

Variety	Seed Source
Top Pick Brown Crowder	Wax
CT Pinkeye	CT Smith
Pinkeye Purplehull BVR	Wax
Early Scarlet	CT Smith
Golden Eye Cream	TAMU
Mississippi Pinkeye	Wax
Pinkeye Purplehull BVR	CT Smith
Top Pick Pinkeye	Wax
TX Pinkeye	TAMU
TX139 Cream	TAMU
Mississippi Silver	Wax
Mississippi Cream	Wax
California Blackeye No. 5.	Copiah Co. Coop
Zipper Cream	Wax
TX 123 Blackeye	TAMU
Top Pick Cream	Wax

Yield and quality data are presented in Table 3. Most of the pink-eye entries produced in-shell yields in the top grouping by least significant difference, with only 'Texas Pinkeye' yielding slightly less. Three entries, 'Top Pick Brown Crowder', 'CT Pinkeye', and 'Pinkeye Purplehull BVR' produced more shelled peas than the others. All of the pink-eye entries produced similar yields to the high-

est yielding pink-eye entry, 'CT Pinkeye'. As in previous years, most cream peas produced lower yields than the pink-eye types. 'Top Pick Brown Crowder' had a higher percent shell out than any other entry, with two cream-types averaging lower percent shell out than all other entries. Pink-eye types generally matured earlier than other seed types tested. Newer cream and pink-eye releases tended to mature earlier than older ones.

Winds during early pod fill lodged nearly all entries to one degree or another but did not seem to influence yield significantly as there was little damage to the plants. The lodging diminished the advantage high-set peas have over traditional entries with regard to ease of harvest. Nonetheless, the high set peas are worth considering because they normally seem to be easier to harvest than traditional plant types and have produced similar yields over the last three seasons.

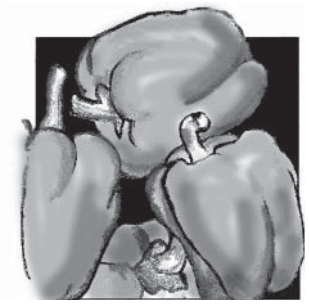
Table 3. Fresh Harvest Southernpea Yield and Quality Attributes at Crystal Springs, Mississippi, 2005

Variety	In-shell weight *lbs/a*	Seed weight *lbs/a*	Percent shellout *%*	Avg. days to middle harvest[1] *days*
Top Pick Brown Crowder	38923	22467	59.7	56.5
CT Pinkeye	42765	20601	48.3	54.1
Pinkeye Purplehull BVR	38071	18293	48	55
Early Scarlet	33612	16383	48.8	54.3
Golden Eye Cream	36039	16369	45.3	55.6
Mississippi Pinkeye	34474	16103	46.6	58
Pinkeye Purplehull BVR	35294	16077	44.9	54
Top Pick Pinkeye	32650	15331	46.9	54
TX Pinkeye	30974	14960	48.1	54.2
TX139 Cream	31363	14754	47	56.3
Mississippi Silver	30371	14540	47.3	59.9
Mississippi Cream	38721	12628	32.5	60.8
California Blackeye No. 5.	28532	11680	41	63.2
Zipper Cream	21503	11342	49.9	61.3
TX 123 Blackeye	23555	10692	45.4	56.2
Top Pick Cream	24394	9272	37.7	56.4
r2	***0.50***	***0.54***	***0.57***	***0.85***
CV	***22***	***26***	***13***	***2.622***
LSD 0.05	***10288***	***5607***	***8.43***	***2.07***

[1] MDTH = (S1*DTH1 + S2*DTH2 + S3*DTH3)/ST, where
MDTH is the median days to harvest,
S1, S2, and S3 are the seed yield per acre on the first through fourth harvest dates,
ST is the total fresh seed yield (sum of S1YS3), and
DTH1, DTH2, and DTH3 are the days from planting to harvest date 1 through date 3, respectively.

Data was analyzed using PROC ANOVA in SAS v.9.1 (SAS Inst., Cary, NC).

In summary, all of the pink-eye entries produced similar fresh seed yields. Cream peas will generally yield less than purple-hull, crowder, or black-eye types. All entries matured within a week of one another, with newer ones being slightly earlier on average. Other than 'Top Pick Brown Crowder' producing an exceptionally high shell out, there were few differences in percent shell-out.



2005 Pepper Variety Trial

Doug Sanders and Luz Reyes

A pepper variety trial was conducted at the Horticultural Crops Research Station in Clinton, North Carolina, to determine the marketable yield and quality of new cultivars and promising breeding lines.

Pepper transplants were set in 20-foot-long double row plots on April 18. Rows were spaced on 5-foot centers and spacing within a row was 1 foot. Beds were irrigated using drip irrigation. A randomized complete block with four replications was used.

Soils were fertilized according to the recommendations of the North Carolina State Extension Service. For current recommendations for pest and weed control in vegetable production in North Carolina, consult your county Extension agent (see http://www.ncsu.edu/extension/).

The trial was compromised by excessive blossom end rot at first harvest, which was attributed to a very cool May and a very warm June so that when the weather changed, the plants were stressed. All cultigens produced acceptable yields except PR0315X16R5 (Table 1). 'Excursion II', ACX 261, and ACX 263 had an excellent overall percentage of No.1 fruits per acre. 'Heritage' and 'Plato' had also good percentages of No. 1 fruits. 'Camelot' also had good marketable yields. ACX 261, ACX 263, BSC 398, and 'Heritage' all would have had much better yields if not for the high cullage from blossom end rot. Best varieties according to yield, color, and size were 'Excursion', and ACX263 followed by BSS-355 (Table 2)

Table 1. Yield and Quality of Various Pepper Cultivars at Clinton, North Carolina, 2005

Variety	Source	Yield per acre *25-lb box*	Marketable yield per acre *25-lb box*	Culls *%*	No. 1 per acre *25-lb box*	No. 2 per acre *25-lb box*	Culls per acre *25-lb box*	Average fruit weight No. 1 *lb.*	Average fruit weight No. 2 *lb.*
ACX261	Abbot&Cobb	993	870	13	590	280	124	0.32	0.24
ACX262	Abbot&Cobb	774	649	16	490	159	125	0.31	0.21
ACX263	Abbot&Cobb	1150	1038	10	721	318	111	0.30	0.21
BSC398	Bejo Seeds	1265	1075	15	207	868	190	0.24	0.19
Camelot	Seminis	698	610	14	412	199	88	0.33	0.21
Excursion II (ACX248)	Abbot&Cobb	983	897	9	646	251	85	0.31	0.22
Heritage	Harris Moran	862	724	16	411	314	136	0.28	0.21
PR0315X16R5	Pep. Res. Inc.	572	479	17	296	183	93	0.33	0.19
PR9321	Pep. Res. Inc.	814	724	11	547	178	90	0.34	0.22
Plato	Seminis	741	627	15	425	202	114	0.33	0.22
SVR7273823	Seminis	851	757	11	581	177	95	0.35	0.20
LSD 0.05%		***309*****	***296****	***4****	***201*****	***125*****	***42*****	***0.05****	***0.05ns***

Table 2. Quality Observtions of Pepper Cultivars at Clinton, North Carolina, 2005

Variety	Source	Overall rating[1]	Yield[2]	Color[3]	Size[4]	Shape[5]	Rank and general comments
ACX261	Abbot&Cobb	2	4.5	G	XL	ML	4 Rough poor overall
ACX262	Abbot&Cobb	3	3	G	L-M	B	2 Very good quality, shows red
ACX263	Abbot&Cobb	5	5	G	XL	B	1+ Excellent quality
BSC398	Bejo Seeds	4.5	3.5	G	M	B	2 Good specialty
Camelot	Seminis	4.5	4.5	G	XL	B	2 Good
Excursion II (ACX248)	Abbot&Cobb	5	4.5	G	XL	B	1+ Impressive, excellent end season late harvest smaller
Heritage	Harris Moran	4.5	4	G	L-M	B	2 Very good quality
PR0315X16R5	Pep. Res. Inc.	3	3	MG	M-S	ML	4 Rough and small
PR9321	Pep. Res. Inc.	4	4.5	G	L	B-L	2 Very good
Plato	Seminis	4	4	G	XL	B	2 Slightly pointed and long
SVR7273823	Seminis	5	5	G	XL	B	2 Impressive best in trial
BSS-355	Bejo Seeds	5	5	DG	L	B	1 Excellent quality

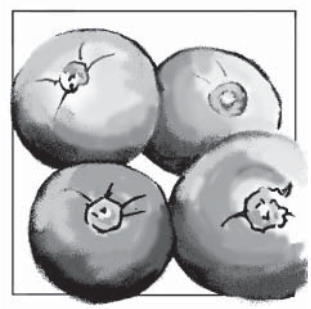
[1] Ratings: 5=Excellent, 4=Very good, 3=Good, 2=Fair, 1=Unacceptable

[2] Yield: 5=Excellent, 4=Very good, 3=Good, 2=Fair, 1=Unacceptable

[3] Color:DG=Dark Green, G=Good Green, MG=Medium Green, LG=Light Green (probably not dark enough for market), Y=Yellow

[4] Size: XL=Extra Large, L=Large, L-M=Large to medium, M-L=Medium to large, M=Medium, S=Small

[5] Shape: B=Blocky, L=Long, ML=Medium Long



2005 Tomato Variety Trial

Doug Sanders and Luz Reyes

A tomato variety trial was conducted at the Horticultural Crops Research Station in Clinton, North Carolina, to determine marketable yield and quality of new cultivars and promising breeding lines of full size and roma type tomatoes.

Tomato transplants were set in 20-foot-long plots on April 18. Plants were spaced 18 inches within a row. Rows were covered with plastic mulch and drip irrigation was installed. A randomized complete block with four replications was used. Fertilization consisted of a pre-plant application of 10-10-20 at a rate of 500 pounds per acre. The remaining N and K_2O recommendation was applied daily at a rate of 2.5 to 5 pounds per acre fertilizer.

As seen in Table 1, there were differences among varieties in marketable yields per acre. Differences were evident in fruit size. Varieties NC 0227, NC 0236, 'Crista', NC 0367, 'Amelia', and 'Phoenix' showed good yields and also higher percentage of extra large and medium fruit size. NC 0392 also gave a good yield per acre with the lowest percent of culls per acre. Varieties 640 BHN and NC 0227 showed the lowest percent of small fruits among varieties, which is an advantage for these two cultivars.

'Amelia' and 'Biltmore' had some exceptionally extra-large fruit, but both had a lot of rough fruit. 'Crista', NC 0392, NC 0367, and BHN 640 had excellent fruit quality. Of the commercial cultivars 'Crista' and 'Phoenix' should be tried by growers.

Roma type tomatoes (Table 2) exhibiting good marketable yields were BSS 436, BSS 437, 'Mariana', and 'Plum Crimson'. BSS 437 had high numbers for large size fruit and small numbers for small size fruit, but the cultivar is too round to be acceptable in most markets. 'Mariana' showed good yield and good number of large fruits. In this trial 'Plum Crimson' showed the smallest percentage of cull fruit. Although BSS 436 had a good marketable yield, the higher percent of fruits was for medium size. BSS 436 and BSS 437 had excellent fruit quality with all the others cultivars having good quality except 'Sunoma', which had too much weather check. 'Mariana' and 'Plum Crimson' should be tried by growers.

Table 1. Yield of Full Size Tomato Cultivars at Clinton, North Carolina, 2005

Variety	Source	Yield per acre	Marketable yield per acre	X-large per acre	Large per acre	Medium per acre	Small per acre	Culls per acre	Average fruit weight X-large	Average fruit weight Large	Average fruit weight Medium	Average fruit weight Small
		25-lb box										
NC 0227	NCSU	1760	1423	836	123	394	73	334	0.75	0.45	0.30	0.14
NC 0236	NCSU	2309	1985	771	133	969	113	324	0.73	0.52	0.58	0.11
NC 0256	NCSU	1732	1514	828	58	530	98	218	0.73	0.37	0.30	0. 15
NC 0367	NCSU	1486	1256	655	92	411	99	229	0.66	0.49	0.30	0.15
NC 0377	NCSU	1314	1125	270	56	638	161	189	0.70	0.50	0.32	0.15
NC 0392	NCSU	1693	1550	850	108	467	125	143	0.76	0.47	0.30	0.14
444 BHN	BHN	1485	1254	648	91	37	141	231	0.76	0.48	0.30	0.13
543 BHN	BHN	1460	1066	454	53	448	111	394	0.72	0.48	0.30	0.13
640 BHN	BHN	1375	995	499	113	341	42	379	0.71	0.50	0.37	0.19
Amelia	Harris Moran	1981	1735	704	134	731	166	246	0.79	0.51	0.34	0.14
Biltmore	Seminis	1659	1304	541	85	503	175	355	0.84	0.85	0.28	0.15
Florida 47	Seminis	1788	1562	701	86	534	242	226	0.72	0.44	0.29	0.17
Phoenix	Seminis	1996	1711	721	85	620	285	285	0.73	0.47	0.27	0.17
LSD .05%		***413*****	***417*****	***236*****	***71***	***352****	***77*****	***113*****	***0.10***	***0.24***	***0.21***	***0.06***

Table 2. Yield of Various Roma Tomato Cultivars at Clinton, North Carolina, 2005

Variety	Source	Yield per acre	Marketable yield per acre	Large per acre	Medium per acre	Small per acre	Culls per acre	Average fruit weight Large	Average fruit weight Medium	Average fruit weight Small
				25-lb box						
BHN 410	BHN	1396	1236	177	396	664	159	0.30	0.25	0.14
BSS 436	Bejo Seeds	1880	1696	320	607	768	184	0.30	0.26	0.13
BSS 437	Bejo Seeds	1921	1800	751	592	457	121	0.28	0.24	0.13
Mariana	Sakata Seeds	1765	1655	487	555	613	111	0.32	0.27	0.18
Plum Crimson	NCSU	1723	1659	328	724	607	64	0.28	0.25	0.17
Sunoma	Seminis	1665	1316	16	499	801	348	0.21	0.28	0.17
LSD .1%		***344****	***311****	***75****	***230***	***172****	***117****	***0.09***	***0.04***	***0.04***

Table 3. Ratings and Comments on Full Size, Roma, and Cherry Tomato Cultivars at Clinton, North Carolina, 2005

Variety	Source	Overall rating[1]	Yield[2]	Size rating July 12	Size rating July 15	Overall quality July 12	Overall quality July 15	Rank and general comments
Full Size								
NC 0227	NCSU	4	5	M-L	M-L	3.5	3.5	3. Rough stem, v. large
NC 0236	NCSU	4	4.5	VL	VL	3.5	3.5	2. Excellent yield
Crista	NCSU	5	4.5	L-M	L-M	4	4	1. V. large, smooth tight stem
NC 0392	NCSU	5	5	VL	VL	3.5	3.5	1. V. large
NC 0367	NCSU	5	5	VL	VL	4	4	1.+ V. large smooth early
NC 0377	NCSU	3	4.5	VL	VL	3	3	3. small fruit late
444 BHN	BHN	4.5	4.5	L	M-L	3.5	3.5	3. Deep globe
543 BHN	BHN	3	3.5	VVL	VL	4	4	2. Smooth
640 BHN	BHN	4	5	VL	L	3.5	3.5	1. Excellent large fruit
Amelia	Harris Moran	3	4.5	L	L	2.5	3	4. Cracks, ruff stem
Biltmore	Seminis	3	3	VL	VL	3	3	5.Sticky stem
Florida 47	Seminis	3.5	4	L	L	4	4	2. Smooth
Phoenix	Seminis	5	5	LM	LM	4.5	4.5	1++. Smooth
Roma								
BHN 410	BHN	4	4	L	L	4	3.5	2.Poor finish
BSS 436	Bejo Seeds	5	4.5	M-L	M-L	5	4.5	1.Excellent yield slightly smaller fruit
BSS 437	Bejo Seeds	4.5	5	M-L	M-L	4	3.5	1.+Very high yield, maybe too round
Mariana	Sakata Seeds	4	4	L	L	4	4	2. Great size
Plum Crimson	NCSU	4.5	4	M-L	M-L	3.5	3.5	2. Good yield, but smaller
Sunoma	Seminis	3.5	3	M-L	M-L	3	3	3. Rough finish, large dimple, some cracking
Observational								
Marcelino (cherry)								1.+++Excellent flavor and crack resistant
NC 03314 (grape)								1.+Very sweet, good flovor, smaller vine**

[1] Rating and Quality: 5=Excellent, 4=Very good, 3=Good, 2=Fair, 1=Unacceptable

[2] Yield: 5=Excellent, 4=Very good, 3=Good, 2=Fair, 1=Unacceptable

Seed Sources for Alabama Trials

Seeds were donated by the following companies:

Palmer Seed Co.
P.O. Box 1866
Palmer City, FL 34991
(772) 221-0653
E-mail: glenk@paramount-seeds.com
Paramount Seed Co.

Sakata Seed America, Inc.
Tech Rep: Atlee Burpee
P.O. Box 880
Morgan Hill, CA 95038
Phone: (610) 316-6063

Sunseeds
Richard Wojciak
12214 Lacewood Lane
Wellington, Florida 33414-4983
Phone : 561 791 9061
Fax: 561 798 4915
Mobile: 561 371 2023
E-mail: richard.wojciak@sunsees.com

O**ther 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

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

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

Sandoz Rogers/Novartis
To order: (912) 560-1863

Siegers Seed Company
13031 Reflections Drive
Holland, MI 49424
Fax: (616) 994-0333

Seminis Vegetable Seeds, Inc
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2221 North Park Ave.
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Phone: (229) 386-0750

Tifton Seed Distribution Center
Tech Rep: Van Lindsey
Phone: (912) 382-1815

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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 2005).

When: April 20, 2006
Deadline for fall 2006 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.

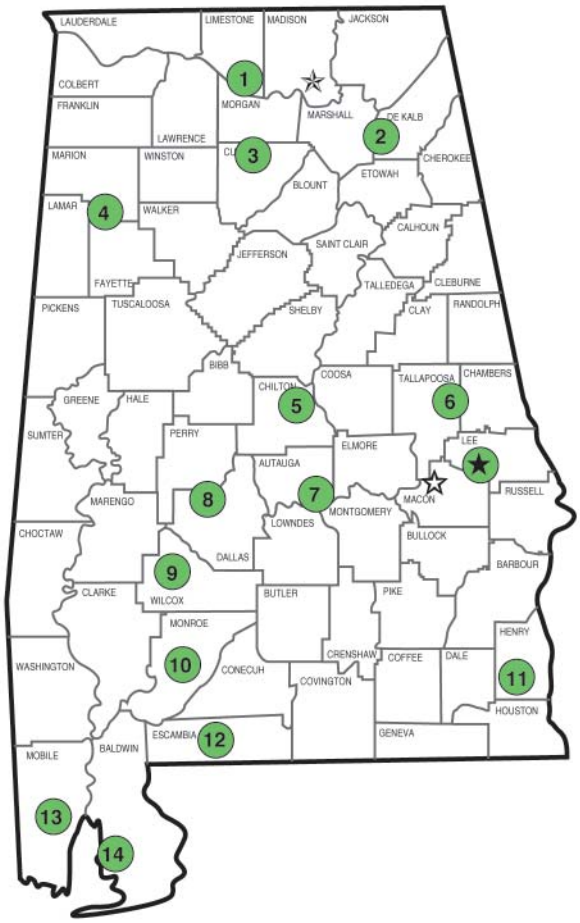
How: Send a disk and hard copy to

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

Alabama's Agricultural Experiment Station
AUBURN UNIVERSITY

With an agricultural research unit in every major soil area, Auburn University serves the needs of field crop, livestock, forestry, and horticultural producers in each region in Alabama. Every citizen of the state has a stake in this research program, since any advantage from new and more economical ways of producing and handling farm products directly benefits the consuming public.



Research Unit Identification

★ Main Agricultural Experiment Station, Auburn.
✯ Alabama A&M University.
☆ E. V. Smith Research Center, Shorter.

1. Tennessee Valley Research and Extension Center, Belle Mina.
2. Sand Mountain Research and Extension Center, Crossville.
3. North Alabama Horticulture Research Center, Cullman.
4. Upper Coastal Plain Agricultural Research Center, Winfield.
5. Chilton Research and Extension Center, Clanton.
6. Piedmont Substation, Camp Hill.
7. Prattville Agricultural Research Unit, Prattville.
8. Black Belt Research and Extension Center, Marion Junction.
9. Lower Coastal Plain Substation, Camden.
10. Monroeville Agricultural Research Unit, Monroeville.
11. Wiregrass Research and Extension Center, Headland.
12. Brewton Agricultural Research Unit, Brewton.
13. Ornamental Horticulture Research Center, Spring Hill.
14. Gulf Coast Research and Extension Center, Fairhope.