

Spring 1999
Commercial Vegetable
Variety Trials



REGIONAL BULLETIN 03
AUBURN UNIVERSITY
THE UNIVERSITY OF GEORGIA
MISSISSIPPI STATE UNIVERSITY
THE UNIVERSITY OF FLORIDA
VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Alabama Agricultural Experiment Station
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November 1999

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Information contained herein is available to all persons without regard to race, color, sex, or national origin.

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Introduction: Interpreting Vegetable Variety Trial Information

Edgar Vinson and Eric Simonne

The Spring 1999 Commercial Vegetable Variety Trials regional bulletin includes results from Mississippi (Mississippi State University), Alabama (Auburn University), Georgia (University of Georgia), Virginia (Virginia Polytechnic Institute and State University), and Florida (University of Florida). By including results from throughout the Southeast and data on disease reaction, more useful information can reach a broader audience. Here are a few tips on how to get the most out of the results.

Trial Ratings

Each test was rated on a 1 to 5 scale, based on weather conditions, fertilizer, irrigation, pest pressure, and overall performance (Table 1). Results from trials with ratings of 2 or less are not reported.

Fertilization, Insect, and Pest Control

Trials conducted at Auburn University Experiment Stations and Research Units were fertilized according to the recommendations of the Auburn University Soil Testing Laboratory. The actual fertilizers and chemicals used are described only to provide detailed information about the cultural practices employed. Mention of fertilizers or chemical names represents neither a recommendation nor an endorsement of these products. A list of chemicals recommended for pest and weed control in vegetable production in Alabama may be found in *IPM Commercial Vegetables: Insect, Disease, Nematode and Weed Control Recommendations* (Publication 99IPM-2 from the Alabama Cooperative Extension System).

Statistical Analyses. The coefficient of determination (R^2), coefficient of variation (CV), and least signifi-

cant difference (Lsd) 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. These three statistical parameters help minimize the potential errors due to the use of small plots. If it were possible to plant a larger plot of each variety, these parameters would be less important.

R^2 ranges 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 less important. CV is an expression of yield variability relative to yield mean. Low CVs (under 20%) are desirable but are not always achieved.

Lsd is the minimum yield difference that is to be observed between two varieties to infer that the one with the highest yield actually performed better. When the difference in yield between two varieties is less than the Lsd value, one cannot conclude that one variety performed better than the other, despite a numerical difference in yield. For example, in the 1999 watermelon trial at the Gulf Coast Research and Extension Center, 'Big Stripe' yielded 52,762 pounds per acre, while 'Summer Gold' and 'Ferrari' yielded 30,470 pounds per acre and 28,453 pounds per acre, respectively. Since there was less than a 22,500 pounds per acre (the Lsd value for yield) difference between 'Big Stripe' and 'Summer Gold' there is no statistical difference between the yields of these two varieties. However, the difference between 'Big Stripe' and 'Ferrari' was 24,309 pounds per acre, indicating that there is a real difference between the yields of these two varieties. From a practical point of view, growers should compare varieties in terms of Lsd.

TABLE 1. DESCRIPTION OF RATINGS

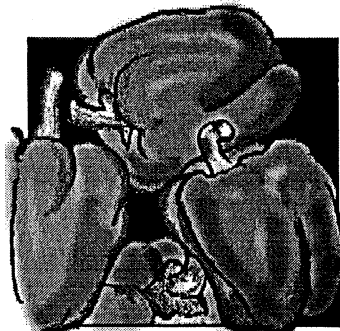
Rating	Weather	Fertilizer	Irrigation	Pests	Overall
5	Very Good	Very Good	Very Good	None	Excellent
4	Favorable	Good	Good	Light	Good
3	Acceptable	Acceptable	Acceptable	Tolerable	Acceptable
2	Adverse	Low	Low	Adverse	Questionable
1	Destructive	Very Low	Insufficient	Destructive	Useless

Using Variety Trial Information for Selection of a Variety

The performance of a genotype is affected by factors such as soil type, growing environment, and weather conditions. Therefore, the information in this report should be used as a primary source of information to pre-select the varieties that have shown under the conditions described hereafter to have potential for high yields and quality. Also, vegetable varieties come and go, and good-performing varieties may not be available consistently. Therefore, it is better to make variety evaluation a part of vegetable production. On-farm evaluation will test the performance of a variety under more specific conditions. The final choice of a variety may have to be adjusted after this second evaluation.

Vegetable Variety Trial Information Available Online

Vegetable variety trial information can now be viewed on the web. With just a few clicks of the mouse, several practical features can be accessed: a list of vegetable crops, an explanation of the ratings system and database, a description of variety types and crops, as well as information on participating seed companies. Is there a variety that could not be found in the AU variety trial reports? Check the list of vegetable crops. This is long list that allows people to search by name, type, and source. The Auburn University Vegetable Variety Trial website can be found at www.ag.auburn.edu/dept/hf/faculty/esimonne. More descriptive information on how to use this site can be found in "AU Vegetable Varieties Online," ANR-1166 from the Alabama Cooperative Extension System. A copy of that publication is included at the end of this bulletin (see page 47).



Bell Pepper Trial at North Alabama

Eric Simonne, Edgar Vinson, and Arnold Caylor

A bell pepper variety trial was conducted at the North Alabama Horticulture Station (NAHS) in Cullman (Tables 1 and 2). Five-week-old peppers were transplanted on four-foot wide, drip-irrigated, and plastic-mulched beds. Peppers were planted in double rows one foot apart, at a within-row spacing of one foot, which created a stand of approximately 15,000 plants per acre.

Fertilizer was applied preplant on April 19 to supply 80 pounds of nitrogen per acre. Peppers were planted on May 27 and fertilized with 10 pounds per acre of calcium nitrate once per week between June 4 and August 6, for a total of 180 pounds of nitrogen for the growing season. Insect control was provided by applications of

TABLE 1. RATINGS OF 1999 BELL PEPPER VARIETY TRIAL¹

Location	NAHS
Weather	5
Fertility	5
Irrigation	5
Pests	5
Overall	5

¹See introduction for a description of rating scales.

Mattach (at the rate of 64 ounces per acre) on July 15, July 22, July 26, and July 28. Weed control consisted of

TABLE 2. SEED SOURCE, FRUIT CHARACTERISTICS, AND RELATIVE EARLINESS OF SELECTED BELL PEPPER VARIETIES

Variety	Type ¹	Seed source	Color ²	Days to harvest	Disease tolerance/resistance ³	Years evaluated
Camelot X3R	F1	Petoseed	G-R	74	BLS(1,2,3),TbMV	94-97,99
Capistrano	OP	Petoseed	G-R	74	TbMV	96,97,99
Enterprise	F1	Asgrow	G-R	77	BLS(1,2,3),TbMV	95-97,99
Sentry	F1	Novartis	G-R	70	BLS(1,2),PVY,Stip,TbMV	97,99
Aladin XR3	F1	Petoseed	G-Y	73	BLS(1,2,3),TBV,TbEV	98,99
Lafayette	F1	Novartis	G-R	—	—	99
King Arthur	F1	Petoseed	G-R	72	BLS(2),PVY,TbEV,TbMV	94-97,99
Purple Beauty	OP	Petoseed	Bk-R	74	TbMV	96,97,99
Bamoa	F1	Petoseed	G-R	74	TbV,PVY	99
Spp 6112	F1	Novartis	G-R	—	—	99
Rpp 6110-vp	F1	Novartis	G-R	—	—	99
Colosal	F1	Novartis	G-R	60	•	99
Summer Sweet #890	F1	A & C	G-R	89	BLS(1,2,3),PVY,TMV	99
ACX 209	F1	A & C	G-R	86	BLS(1,2,3)	99
Merlin	F1	Seedway	G-R	68	TMV	99
Yankee Bell	OP	Johnny's	G-R	70	•	99
Ace	F1	Johnny's	G-R	60	BD	99

¹Type: F1 = Hybrid; OP = Open Pollinated.

²Color: Bk = black; G = green; R = red; Y = yellow.

³Disease tolerance/resistance: BD = Blossom Drop; PVY = Potato Virus Y; TbEV = Tobacco Etch Virus; TBV = Tobomovirus; TbMV = Tobacco Mosaic Virus; BLS = Bacterial Leaf Spot; — =not found in seed catalogues; • = none.

Gramoxone Extra (at a rate of three pints per acre) on June 7.

Bell peppers were harvested on August 11. Fruits were harvested at the mature-green color stage, weighed, and graded (Table 3) using the standards of the *Sweet Pepper Grader's Guide* (Circular ANR-784 of the Alabama Cooperative Extension System).

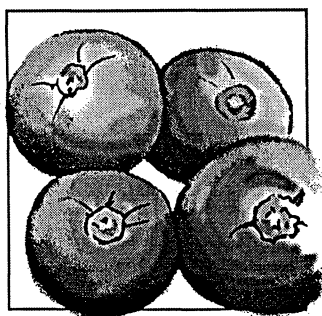
Overall yields were low compared to previous years because only one harvest was made in 1999. The refer-

ence varieties in this trial were 'King Arthur', 'Camelot X3R', 'Enterprise', and 'Sentry'. 'King Arthur', 'Colossal', and 'Merlin' were the varieties with highest yields. 'Colossal' was noted for its high number of fancy grade peppers. 'Capistrano', 'Yankee Bell', and 'Purple Beauty' were the only open pollinated varieties and were out performed by most hybrids.

TABLE 3. TOTAL PRODUCTION AND GRADE DISTRIBUTION OF SELECTED BELL PEPPER VARIETIES GROWN AT THE NORTH ALABAMA HORTICULTURE STATION¹

Variety	Total market- able wt. ¹ lbs/a	Total fancy wt. lbs/a	Total US#1 wt. lbs/a	Total US#2 wt. lbs/a	Total cull lbs/a	Total fancy no. #/a	Total US#1 no. #/a	Total US#2 no. #/a	Individual fancy wt. lb
King Arthur	18,714	3,379	9,145	6,190	4,661	7,194	25,234	21,582	0.47
Colossal	18,688	9,264	6,111	3,313	4,344	19,784	18,421	12,917	0.47
Merlin	18,303	4,772	7,752	5,779	4,544	12,644	22,945	28,395	0.39
Lafayette	15,606	4,075	6,821	4,710	3,802	8,775	17,495	16,405	0.48
Ace	14,239	1,628	6,982	5,628	4,601	5,069	28,994	31,992	0.36
Camelot X3R	14,186	5,206	5,625	3,354	2,898	11,663	16,841	13,189	0.46
Spp 6112	13,219	4,373	5,823	3,024	3,411	10,301	18,258	12,808	0.41
Summer Sweet # 890	12,059	2,420	5,737	3,903	4,680	5,614	16,296	15,369	0.46
Sentry	11,315	3,638	4,864	2,813	4,328	7,903	12,590	11,118	0.47
Rpp 6110-vp	11,132	4,761	4,004	2,367	5,145	11,118	13,407	10,900	0.44
Enterprise	10,511	2,025	4,370	4,116	5,614	5,232	14,334	16,786	0.42
ACX 209	9,800	4,109	3,703	1,988	5,838	9,974	10,137	8,611	0.43
Bamoa	9,452	2,783	3,973	2,697	4,384	7,249	11,336	11,227	0.43
Capistrano	7,573	807	3,640	3,126	3,428	1,799	9,810	12,208	0.49
Purple Beauty	7,335	798	2,621	3,916	6,389	1,962	9,047	16,132	0.40
Yankee Bell	7,038	276	2,570	4,193	4,652	927	10,628	19,620	0.26
Alladin X3R	6,533	1,300	2,187	3,046	5,024	3,815	7,685	14,170	0.36
<i>R</i> ²	<i>0.66</i>	<i>0.54</i>							<i>0.51</i>
<i>CV</i>	<i>27</i>	<i>64</i>							<i>13</i>
<i>Isd</i>	<i>1,055</i>	<i>1,595</i>							<i>0.10</i>

¹ Marketable weight was determined as Fancy weight + US#1 weight + US#2 weight.



Several New Tomato Varieties Evaluated in North Alabama

Eric Simonne, Edgar Vinson, and Arnold Caylor

A tomato variety trial was conducted at the North Alabama Horticultural Station (NAHS) in Cullman (Tables 1 and 2).

Five-week-old tomatoes were transplanted on May 27 onto three-foot-wide trickle-irrigated beds covered with plastic. Plots were 12 feet long and five feet wide. Within-row spacing was 18 inches, which created a stand of approximately 5,800 plants per acre. Plants were staked and tied.

Preplant fertilization consisted of an application of 80 pounds of nitrogen. Tomato transplants were injected with five pounds of nitrogen per acre twice per week from June 4 through August 6. Insects were controlled by applications of Spintor (at a rate of three ounces per acre) on June 25; Mattach (at a rate of two quarts per acre) on July 2, July 15, July 22, and July 28; and Asana XL (at a rate of 9.6 ounces per acre) on July 8. Fungicides used were Bravo (at a rate of three pints per acre) on July 8, July 15, and July 28; Ridomil (at a rate of 1.7 pounds per acre) on July 2; Man-Kocide (at a rate of 2.5 pounds per acre) on June 4, June 11, and June 18; and Penncozeb (at a rate of two pounds per acre) on July 22.

Plots were harvested on August 3, August 10, August 17, and August 19. Fruits were harvested at the

TABLE 1. RATINGS OF 1999 TOMATO VARIETY TRIAL¹

Location	NAHS
Weather	5
Fertility	5
Irrigation	5
Pests	5
Overall	5

¹See introduction for a description of rating scales.

breaker stage, weighed, and graded. 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>3.5 inch), Extra-Large (D>2.9 inch), Large (D>2.5 inch), or Medium (D>2.3 inch). Marketable yield was calculated by combining the Jumbo, Extra-Large, and Large grades (Tables 3).

Overall tomatoes performed well despite late planting and increasing disease pressure. 'Sunpride', 'Caroling Gold', and 'Mountain Spring' were three of the top performers, out performing the standards 'Florida 47' and 'Agriset'. Two new varieties, 'Red Sun' and 'Voyager', performed well also.

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 tolerance/resistance ³	Years evaluated
Agrisnet 761	F1, FM	Agrisales/UF1	Det	Red	—	—	97-99
Carolina Gold	F1, FM	Novartis/N.C.State	Det	Yellow	75	FW,VW	99
EX-10091	F1, FM	Asgrow	Det	Red	—	—	98,99
Fabulous	F1, FM	Seedway	Det	Red	77	ASC,FW,St,TbMV, VW	99
Florida 47*	F1, FM	Asgrow	Det	Red	75	ASC,FW,St,VW	97-99
Mt. Spring	F1, FM	Sandoz Rogers	Det	Red	69	FW,VW	94-99
Red Sun	F1, FM	Johnny's	Det	Red	72	FW, NE, TbMV, VW	99
RFT-6116	F1, FM	Novartis	Det	Red	—	—	98,99
Sunbeam	F1, FM	Asgrow	Det	Red	75	FW,VM	94-99
Sunbelt	F1, FM	Petoseed	Det	Red	72	ASC,FW,NE,St,VW	96,97
Sunleaper	F1, FM	Rogers	Det	Red	70	FW,VW	98,99
Sunpride	F1, FM	Asgrow	Det	Red	80	ASC,FW,St, VW	94-99
Ultra Magnum	F1, FM	Stokes	Det	Red	68	FW,TbMV,VW	94-99
Ultra Sweet	F1, FM	Stokes	Det	Red	62	FW,TbMV,VW	95-99
Voyager	F1, FM	Johnny's	Det	Red	78	FW,VM	99
XP10089	F1, FM	Asgrow	Det	Red	—	—	99

*Formerly XPH10047; — = not available; from seed catalogues.

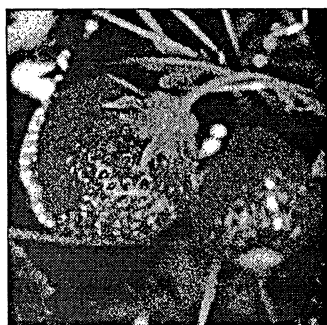
¹Type: F1 = Hybrid; OP = Open pollinated; FM = Fresh Market; RO = Roma (Elongated fruits); CH = Cherry (Small, round fruits); SA = Saladette; Plm= Plum.

²Plant Habit: Det = Determinate; Indet = Indeterminate.

³Disease Resistance/Tolerance: FW = Fusarium Wilt; VW = Verticillium Wilt; ASC = Alternaria Stem Canker; St = Stemphylium (gray leaf spot); NE = Root-knot Nematodes; TbMV = Tobacco Mosaic Virus.

TABLE 3. TOTAL PRODUCTION AND GRADE DISTRIBUTION OF SELECTED FRESH-MARKET TOMATO VARIETIES GROWN AT THE NORTH ALABAMA HORTICULTURE STATION

Variety	Total market- able wt. lbs/a	Total jumbo wt. lbs/a	Total jumbo no. #/a	Total large wt. lbs/a	Total large no. #/a	Total medium wt. lbs/a	Total cull lbs/a	Individual fruit wt. lb
Sunpride	28,133	7,111	39,386	16,426	16,713	4,596	11,344	0.74
Carolina Gold	28,049	7,444	35,483	15,972	15,768	4,636	11,525	0.69
Mountain Spring	26,428	6,986	25,047	14,974	11,206	4,469	8,440	0.69
Red Sun	23,814	8,411	24,684	11,525	9,589	3,878	10,486	0.78
Voyager	23,332	8,319	30,129	11,525	12,443	3,488	10,255	0.61
Florida 47	22,442	6,297	26,318	12,887	11,228	3,259	7,805	0.67
Agrisnet	20,931	5,925	31,763	11,798	12,750	3,209	8,621	0.56
Sun Leaper	20,891	7,190	28,223	10,618	11,568	3,083	4,710	0.54
XP 10089	20,889	4,684	26,499	12,705	10,859	3,500	6,988	0.70
Sunbelt	20,411	4,843	16,607	12,070	8,608	3,498	5,717	0.74
Sunbeam	20,375	3,800	31,218	12,798	12,817	3,780	5,717	0.61
RFT6116	20,267	6,112	25,955	10,708	10,867	3,447	8,258	0.57
Ultra Sweet	20,262	1,358	19,874	14,611	8,528	4,293	1,180	0.74
EX 10091	17,910	5,912	27,407	9,438	13,084	2,559	9,892	0.51
Fabulous	15,932	5,885	22,778	7,805	9,601	2,242	6,534	0.46
Ultra Magnum	14,437	3,609	18,513	8,440	7,652	2,388	3,630	0.56
<i>R</i> ²	0.23	0.24						0.24
<i>CV</i>	36	30						30
<i>lsd</i>	5,250	2,460						0.26



'Chandler' and 'Camarosa' Best in North Mississippi Strawberry Trial



Kent Cushman and Thomas Horgan

Fresh-dug 'Chandler' and 'Camarosa' plants were obtained from Norcal Nursery Inc. of Red Bluff, California. Fresh-dug 'Sweet Charlie' and 'Gaviota' plants were obtained from Lewis Nursery and Farms Inc. of Rocky Point, North Carolina. 'Pelican' and 'MSUS 572' plants were obtained from Barbara Smith's USDA/MSU program located in Poplarville, Mississippi. 'Pelican' and 'MSUS 572' have been developed for resistance to common anthracnose diseases.

All plants were planted through the plastic by hand during the first week of November 1998. Sprinkler irrigation was applied daily for a week to establish plants. Plants were spaced 12 inches apart in double rows also spaced 12 inches apart. Plots were 8.5 feet long and five feet wide.

Preplant fertilizer was broadcast before bed formation at the rate of 40 pound of N, 20 pounds of P_2O_5 , and 20 pounds of K_2O per acre. Soluble fertilizer was applied throughout the spring growing season by injecting a concentrated fertilizer solution [Peters 20-20-20 or $Ca(NO_3)_2$] through the drip irrigation system to obtain a final N concentration of 100 ppm in the irrigation water.

Soluble fertilizers contributed an additional 60 pounds of N, 40 pounds of P_2O_5 , and 20 pounds of K_2O per acre. Early season frost protection was not provided during this study. There was no need for insect or disease control throughout the study.

Harvest began April 12 and ended June 4 for a total of 18 harvests. Monday, Wednesday, and Friday was our

usual picking schedule. Fruit from each plot was separated into marketable and cull and then counted and weighed (see table).

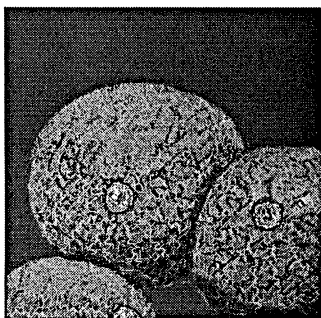
STRAWBERRY MARKETABLE YIELD

Entry	Total yield ¹ lbs/a	Marketable yield ² %	Average berry wt. oz
Chandler	11,500	64	0.58
Camarosa	10,800	73	0.58
MSUS 572	6,300	37	0.61
Pelican	6,300	43	0.52
Sweet Charlie	4,000	48	0.56
Gaviota	3,900	56	0.56
<i>R</i> ²	0.71	0.88	
<i>CV</i>	37	11	
<i>lsd</i>	4,700	11	

¹ Total yield of 18 harvests.

² Relative number of marketable fruit as the percentage of total number harvested (marketable plus culls).

'Chandler' and 'Camarosa' produced the greatest total and the highest marketable yields in this study. There were no significant differences in total and marketable yields between these two entries. 'Chandler' was the highest yielding cultivar in our 1998 trial, but that trial did not include 'Camarosa', 'Sweet Charlie', and 'Gaviota'. 'MSUS 572' produced the lowest marketable yield.



Cantaloupe Variety Trial in Eastern Georgia

George Boyhan and Darbie Granberry

A cantaloupe variety trial was conducted at the Vidalia Onion and Vegetable Research Farm in Reidsville, Georgia. The site for the trial was prepared with the application of one ton of lime per acre. In addition, 400 pounds per acre of 15-0-15 fertilizer were applied preplant and incorporated on May 10, 1999. The transplants were seeded on April, 15 1999 and were transplanted on May 12, 1999 to a spacing of five feet in the row and six feet between the rows. The experimental design was a randomized complete block design with four replications. Curbit herbicide was applied at a rate of 0.75 pounds active ingredient per acre. Hand weeding was also used as needed. Two hundred pounds of

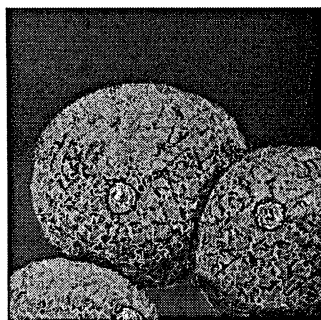
additional fertilizer as NH_4NO_3 was applied on July 1, 1999.

The trial was harvested on July 9, 1999. Harvested fruits were counted and weighed. Two representative fruits from each plot were selected and additional data were collected. This included the fruit length and width as well as flesh thickness. In addition, the soluble solids (sugar content) were recorded for each fruit. The fruit type and flesh color were also noted.

Yields ranged from 2,428 pounds per acre for 'AC-89-55MI' to 11,013 for 'SXM7204' with an lsd of 3,747 pounds per acre. There were no significant differences for soluble solids (sugar content).

CANTALOUPE VARIETY TRIAL RESULTS 1999 VIDALIA ONION AND VEGETABLE RESEARCH FARM

Variety	Source	Yield <i>lbs/a</i>	Fruit length <i>in</i>	Fruit width <i>in</i>	Flesh thickness <i>in</i>	Fruit wt <i>lbs</i>	Sol. solids %	Flesh color	Fruit type
AC-82-37RNL	Auburn U.	10,113	6.7	5.8	1.7	5.0	6.2	Orange	Western
Super 45	Wilhite Seed	3,350	6.1	5.4	1.5	2.7	7.3	Orange	Western
AC-75-1A	Auburn U.	2,962	5.4	5.2	1.5	2.2	7.1	Orange	Western
AC-89-55MI	Auburn U.	2,428	5.3	5.0	1.4	2.2	6.2	Orange	Western
SXM7204	Sunseed	11,013	6.8	6.1	1.8	3.9	7.9	Orange	Eastern
SXM7119	Sunseed	7,805	7.0	6.1	1.7	4.5	6.5	Orange	Eastern
Vienna	Asgrow	5,430	7.8	6.8	1.9	5.3	6.7	Orange	Eastern
<i>CV</i>		<i>7</i>	<i>4</i>	<i>1</i>	<i>4</i>				
<i>R</i> ²		<i>0.8</i>	<i>1</i>	<i>0.4</i>	<i>6</i>				
<i>lsd</i>		<i>3,747</i>	<i>NS</i>						



‘Hy-Mark’ is Still among Top Western-type Melons

Eric Simonne, Edgar Vinson, Rasima Bakhtiyarova, Jim Bannon, Bobby Boozer, Jason Burkett, Tony Dawkins, and Jim Pitts

Small melons (cantaloupe and honey dew) variety trials were conducted at the E. V. Smith Research Center (EVSRC) in Shorter, Chilton Area Horticulture Station (CAHS) in Clanton, and the Sand Mountain Research and Extension Center (SMREC) in Crossville (Tables 1 and 2).

At EVSRC, calcium nitrate (15.5-0-0) and muriate of potash (0-0-60) were applied preplant at rates of 387 and 167 pounds per acre, respectively, on March 24. Melons were direct seeded on April 29. Alternate injections of calcium nitrate (9-0-0-11) and 20-20-20 were made twice weekly from May 11 through June 22. Insect control consisted of applications of Endosulfan (2.5 pints per acre) on May 24; Thiodan (2.5 pints per acre) on May 29; and Asana (9.6 ounces per acre) on June 5 and June 19. Fungicides applied were Manex (1.6 quarts per acre) on May 14 and 24; Benlate 50 WP (one pound per acre) on May 24; Terranil 6L (two pints per acre) on May 29, June 5, June 10, and June 19.

At CAHS, fertilization consisted of a preplant application (per acre) of 54 pounds of N and K₂O and weekly injection ranging between 7 and 14 pounds of N and K₂O between May 3 and July 12. A total of 160 pounds of N and K₂O were injected during the growing season. Insect control was provided by applications of Thiodan (at a rate of one pint per acre) on May 21 and 28; and Lannate LV (at a rate of two pints per acre) on June 7, June 14, June 21, June 28, July 2, July 23, and August 3. Fungicides used were Kocide (at a rate of 2.7 pounds per acre) and Maneb 80 (at a rate of 1.5 pounds per acre) on May 24, May 31, June 7, June 14, June 21, June 28, July 2, July 23, and August 3; and, Ridomil/Bravo 81W (at a rate of two pounds per acre) on August 8.

At SMREC, preplant fertilization consisted of an application of 5-20-20 (500 pounds per acre) on April 26. Small melons were direct seeded on May 3 and were fertilized with 13-0-44 at 50 pounds per acre and 30 pounds per acre on May 20 and June 3, respectively. Plants were also fertilized with 50 pounds per acre of

TABLE 1. RATINGS OF 1999 CANTALOUPE VARIETY TRIALS¹

Location	EVSRC	CAHS	SMREC
Weather	5	5	5
Fertility	5	5	5
Irrigation	5	5	5
Pests	5	5	5
Overall	5	5	5

¹See introduction for a description of rating scales.

calcium nitrate on June 16 and with 20-20-20 at 30 pounds per acre on July 6. Preplant herbicides were Alanap (seven quarts per acre) and Trillin (1.5 pints per acre) on April 26. Fungicides used were Mankocide (two pounds per acre) on May 27, June 7, and June 17; Ridomil (two pounds per acre) on June 22 and July 7; and Benlate (0.3 pound per acre) on June 30 and July 16. Insects were controlled with Diazinon (two pints per acre) on May 14; Asana (five ounces per acre) on May 27, June 30, and July 7; and Sevin XLR (one quart per acre) on June 7, June 17, and June 22.

Melons were harvested and graded on July 7, July 9, July 12, July 14, and July 19 at EVSRC; July 7, July 9, July 12, July 14, and July 19 at CAHS. At SMREC melons were once-over harvested on July 21 (Table 3). On eight representative melons of each variety at each location, soluble-solid content was determined with a hand-held refractometer. Soluble-solid content is a practical measurement of sweetness.

Harvesting small melons at an over-ripe stage may reduce shelf life and increase the risk of splitting during transportation. Flavor may also be adversely affected. Selected cantaloupe varieties may be harvested at half-slip. Honey dew melons do not slip naturally from the vine and are considered vine-ripe when the pubescence on the melon falls and/or when rind color changes from green to yellowish. Honey dew melons may be harvested at an immature stage; they will continue to ripen and

TABLE 2. SEED SOURCE, FRUIT CHARACTERISTICS, AND RELATIVE EARLINESS OF SELECTED SMALL MELONS

Variety	Type ¹	Seed source	Rind aspect ²	Flesh color ³	Days to harvest	Disease claims ⁴	Years eval.
AC-75-1A	OP	Auburn U.	W	O	—	—	98,99
AC-82-37-RNL	OP	Auburn U.	W	O	—	—	98,99
AC-89-55-M1	OP	Auburn U.	W	O	—	—	99
Apollo	F1	Novartis	E	O	75	FW(0,1,2),PM(1,2)	99
Arava	F1	Johnny's	Spe	Gr	77	PM	99
Athena	F1	Novartis	E	O	80	FW,PM	94-99
Cristobal	F1	Asgrow	W	O	—	FW(2),PM(1),Su	98,99
Dallas	F1	Willhite	E	O	80	PM	99
Earli-Dew	F1	Petoseed	HD	Gr	80	FW	95-99
Hy-Mark	F1	Petoseed	W	O	83	PM,Su	94-99
Megabrew	F1	Sakata	HD	Gr	—	—	99
Mission	F1	Asgrow	W	O	80	PM,Su	94-99
Otero	F1	Hollar	W	O	—	—	97-99
Passport*	F1	Stokes	Spe	Gr	75	ANT,GSB	96-99
Starfire	F1	Harris Moran	E	O	67	FW(0,2), PM	99
Super 45	F1	Willhite	E	O	80	PM	99
Tesoro Dulce	F1	Asgrow	HD	Wh	—	—	98,99
Vienna	F1	Asgrow	E	O	66	•	98, 99

* = Honey Dew x Galia cross; — = not found; from seed catalogues; • = none

¹ Type: F1 = Hybrid; OP = Open pollinated.

² Rind Aspect: W = Western; E = Eastern; HD = Honey Dew; Spe = Speciality.

³ Flesh Color: O = Orange; Gr = Green; Y = Yellow; Wh=White

⁴ Disease Claims: FW = Fusarium Wilt; PM = Powdery Mildew; ANT = Anthracnose; DM = Downy Mildew; Su = Sulfur; GSB = Gummy Stem Blight.

become sweeter during storage. Hence, sugar content at harvest is not a good indicator of sweetness at maturity. French Charentais melons may be harvested when the distal end becomes soft to the touch, while the melon still shows a green appearance.

In the eastern-types, 'Vienna' and 'Athena' had comparable yields and size except at SMREC where yields of 'Vienna' were significantly higher than that of 'Athena'. In the western-type, 'Otero', 'Hy-Mark', and

'Mission' out performed 'Cristobal' at EVSRC. Several experimental lines were evaluated at CAHS and SMREC. At both locations, 'Hy-Mark' was among the top varieties, while yields of 'AC-82-37-RNL' were significantly lower. At CAHS, yields of western-type melons were low due to small fruit size. Among the honey dews, 'Honey Brew' was consistently a higher yielder because of its higher individual fruit weight.

TABLE 3. YIELD OF SELECTED SMALL MELON VARIETIES

Variety	Type	Marketable yield lbs/a	Marketable fruits #/a	Individual fruit wt. lb	Soluble solids %	Cull wt. fruits lbs/a
E.V. Smith Research Center						
Vienna	Eastern	31,562	5,075	6.2	9.2	969
Athena	Eastern	26,728	4,640	5.6	10.3	447
Megabrew	Honey Dew	28,620	3,988	6.9	5.3	0
Tesoro Dulce	Honey Dew	23,893	4,060	5.6	13.3	993
Dallas	Honey Dew	9,644	2,103	4.7	11.0	0
Passport	Specialty	25,839	6,525	3.9	10.7	566
Otero	Western	38,424	10,150	3.9	10.2	1,411
Hy-Mark	Western	33,072	9,280	3.6	10.8	1,219
Mission	Western	25,292	7,033	3.8	12.1	174
Cristobal	Western	19,418	4,640	4.2	23.2	0
<i>R</i> ²		0.23	0.47	0.70		
<i>CV</i>		51	51.9	18		
<i>lsd</i>		14,550	3,137	1.7		
Chilton Area Horticulture Station						
Vienna	Eastern	27,449	5,945	4.4	8.8	1,737
Athena	Eastern	24,972	5,583	4.6	8.9	1,712
Super 45	Eastern	7,592	4,785	1.7	7.3	2,600
Earli-Dew	Honey Dew	13,640	3,625	3.9	8.0	732
Tesoro Dulce	Honey Dew	10,789	2,683	3.7	7.1	378
Megabrew	Honey Dew	6,527	2,320	3.1	5.6	883
Passport	Specialty	19,778	3,480	9.0	8.4	993
Arava	Specialty	16,095	5,293	3.1	8.1	1,573
AC-75-1A	Western	7,896	5,583	1.3	5.8	3,425
AC-89-55-M1	Western	5,452	3,335	1.7	6.0	5,786
Hy-Mark	Western	5,205	2,828	1.7	5.9	4,755
AC-82-37-RNL	Western	4,081	2,828	1.5	5.6	4,041
<i>R</i> ²		0.66	0.38			
<i>CV</i>		51	46			
<i>lsd</i>		1,467	1,080			
Sand Mountain Research and Extension Center						
Vienna	Eastern	45,554	8,029	5.8	10.6	
Star Fire	Eastern	42,212	7,270	5.8	9.1	
Athena	Eastern	34,991	6,510	5.4	8.2	
Dallas	Eastern	31,465	9,331	3.5	8.6	
Megabrew	Honey dew	35,376	6,456	5.4	10.8	
Tesoro Dulce	Honey dew	18,532	3,960	4.8	8.8	
Earli-Dew	Honey dew	16,259	4,069	4.0	9.5	
Arava	Specialty	32,024	7,595	4.3	9.8	
Passport	Specialty	9,928	2,767	3.5	10.5	
AC-75-1A	Western	34,807	10,904	3.0	9.2	
Hy-Mark	Western	26,751	8,083	3.3	9.9	
AC-89-55-M1	Western	24,526	11,230	2.2	8.9	
AC-82-37-RNL	Western	18,000	8,572	2.0	11.0	
<i>R</i> ²		0.54	0.50	0.80		
<i>CV</i>		39	41	16		
<i>lsd</i>		7,200	1,940	0.9		



Green Bean Experimentals Released as 'Capricorn' and 'Mercury'



Eric Simonne, Edgar Vinson, and Tony Dawkins

A green bean variety trial was conducted at the Sand Mountain Research and Extension Center (SMREC) in Crossville (Tables 1 and 2).

Beans were direct seeded on bare ground into 20-foot-long plots at a within row spacing of one foot on April 16. Soils were fertilized according to the recommendations of the Auburn University Soil Testing Laboratory. Names of the chemicals are mentioned only for describing the production practices used. This represents neither a recommendation nor an endorsement of these products. Current recommendations for pest and weed control in vegetable production in Alabama may be found in *IPM Commercial Vegetable: Insect, Disease, Nematode and Weed Control Recommendations* (Publication 99IPM-2 from the Alabama Cooperative Extension System).

Fertilization consisted of applications of 5-20-20 (300 pounds per acre) and ammonium nitrate (150 pounds per acre) on May 27. Dual herbicide (two pints per acre) was applied preplant on May 3. Insecticides used were Diazinon (two pints per acre) on May 14; Asana (five ounces per acre) on May 27 and June 30;

TABLE 1. RATINGS OF 1999 GREEN BEAN VARIETY TRIAL¹

Location	SMREC
Weather	5
Fertility	5
Irrigation	5
Pests	5
Overall	5

¹See introduction for a description of rating scales.

and Sevin XLR (one quart per acre) on June 7, June 17, and June 22. Disease control was provided by applications of Mankocide (1.5 pounds per acre) on June 7 and June 17; Ridomil (two pounds per acre) on June 22; and Benlate (0.3 pounds per acre) on June 30.

Green beans were hand harvested on July 7, July 14, July 21, and August 8. Marketable yield, weight, and length of 50 pods were determined (Table 3).

The standards 'Bronco' and 'Hialeah' were among the top yielding varieties, along with the two new releases 'Capricorn' and 'Mercury'.

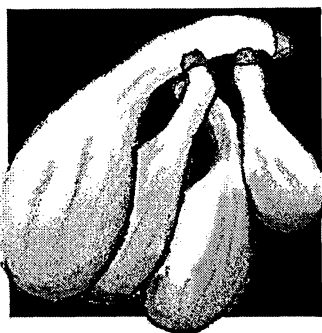
TABLE 2. SEED SOURCE, EARLINESS, AND DISEASE CLAIMS OF SELECTED GREEN BEAN VARIETIES

Variety	Type	Seed source	Days to harvest	Growth habit	Pod color	Pod shape	Disease claims ¹	Years evaluated
Benchmark	OP	Sandoz Rogers	55	Bush	Green	Round	CBMV, NY15MV	97-99
Bronco	OP	Asgrow	53	Bush	Green	Round	CBMV	97-99
Carlo	OP	Asgrow	55	Bush	Green	Round	CBMV	97-99
Hialeah	OP	Ferry-Morse	53	Bush	Green	Oval	NY15MV	97,99
Mirada	OP	Rogers	54	Bush	Green	Round	—	98,99
Capricorn(MB-8007)	OP	Novartis	59	Bush	Green	Round	CBMV,NY15MV	98,99
Stallion	OP	Asgrow	53	Bush	Green	Round	CBMV, HB	98,99
Storm	OP	Asgrow	51	Bush	Green	Round	CBMV	98,99
Mercury (SB 4136)	OP	Novartis	55	Bush	Green	Round	NY15	98,99
SB4222	OP	Novartis	54	Bush	Green	Round	—	99

¹ Disease Claims: CBMV=Common Bean Mosaic Virus; Halo Blight=HB; NY15MV=Mosaic Virus race NY15. — = not found.

TABLE 3. YIELD AND POD CHARACTERISTICS OF SELECTED GREEN BEAN VARIETIES GROWN AT THE SAND MOUNTAIN RESEARCH AND EXTENSION CENTER

Variety	Plant stand %	Marketable yield lbs/a	Cull weight lbs/a	Pod weight lbs/100 pods	Pod length in/pod
Capricorn (MB 8007)	86	3,341	1,005	2.00	3.1
Mirada	88	3,275	854	1.83	2.9
Storm	83	3,152	794	2.26	3.6
Bronco	88	3,112	783	1.57	2.5
Hialeah	89	2,998	753	1.81	2.9
Mercury (SB 4136)	83	2,906	949	1.96	3.1
Stallion	83	2,415	699	1.86	2.9
Benchmark	78	2,330	806	2.03	3.2
Carlo	88	2,207	534	1.47	2.3
SB 4222	85	1,914	695	1.92	3.0
<i>R</i> ²	<i>0.15</i>	<i>0.30</i>	<i>0.26</i>	<i>0.60</i>	<i>0.17</i>
<i>CV</i>	<i>30</i>	<i>31</i>	<i>10</i>	<i>6.0</i>	<i>10</i>
<i>lsd</i>	<i>13</i>	<i>763</i>	<i>355</i>	<i>0.31</i>	<i>0.1</i>



Green Blossom End of 'Zephyr' Makes Squash Trials Colorful



Eric Simonne, Edgar Vinson, Rasima Bakhtiyarova,
Randy Akridge, Jim Bannon, and Jason Burkett

Yellow and zucchini squash variety trials were conducted at the Brewton Experimental Field (BEF) in Brewton and E.V. Smith Research Center (EVSRC) in Shorter (Tables 1 and 2). At both locations, squash were direct seeded at a one-inch depth in single row plots, five feet wide and 20 feet long. In-row spacing was 18 inches, which provided a stand of approximately 6,000 plants per acre. Both trials were drip irrigated and the beds were covered with plastic mulch.

At BEF, preplant fertilization consisted of 60 pounds of nitrogen per acre. Crookneck squash were direct seeded on silver, reflective plastic on May 20. Insect control was provided by Sevin at a rate of two quarts per acre on June 17. To control weeds, atrazine was applied at the rate of two quarts per acre on May 9, 1998. Broadstrik fungicide was applied at a rate of 1.5 quarts per acre on May 9. Alleys between the beds were sprayed with Roundup three weeks after emergence. No other chemical was used.

At EVSRC, zucchini squash were direct seeded on April 28. Calcium nitrate (15.5-0-0) and muriate potash (0-0-60) were applied preplant at rates of 387 and 167 pounds per acre, respectively, on March 24. Alternate injections of calcium nitrate and 20-20-20 were made twice weekly from May 11 through June 22. Insect control consisted of applications of Endosulfan (2.5 pints per acre) on May 24; Thiodan (2.5 pints per acre) on May 29; and Asana (9.6 ounces per acre) on June 5 and June 19. Fungicides applied were Manex (1.6 quarts per acre) on May 14 and May 24; Benlate 50 WP (one pound per acre) on May 24; Terranil 6L (two pints per acre) on May 29, June 5, June 10, and June 19.

At EVSRC, zucchini squash were harvested 12 times between June 2 and June 25. At BEF planting was de-

**TABLE 1. RATINGS OF 1999 SUMMER SQUASH
VARIETY TRIALS¹**

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

¹See introduction for a description of rating scales.

layed due to drought-like weather conditions. Consequently, there were only four harvests made between July 1 and July 12.

In order to be graded as US#1, summer squash must be harvested frequently while they are fairly young and tender. At harvest, fruits were graded as US#1, US#2 or cull according to the United States Standards for Grades of Summer Squash (U.S. Dept. Agr. G.P.O. 1987-180-916:40730 AMS). Marketable yield was calculated by adding the US#1 and US#2 yields. Earliness (Tables 3 and 4) was evaluated by combining the yields of the first four harvests. Total production (Tables 5 and 6) was also determined.

All crookneck varieties were evaluated at BEF. Trends for total and early yields were similar. Top performing varieties were 'Zephyr' and 'Pic-N-Pic', which are not commonly grown in commercial production. The standards 'Dixie' and 'Gentry' did not stand out. Under low virus pressure in this trial, the transgenic varieties 'Prelude II', 'Liberator III', and 'Destiny III' did not show their potential.

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
Yellow Crookneck					
Crescent	F1	Rogers	45	—	94,98,99
Destiny III**	F1	Asgrow	—	CMV,W MV,ZYMV	97-99
Dixie	F1	Asgrow	41	—	94-96,98,99
Gentry	F1	Sandoz Rogers	—	—	95-99
Liberator III**	F1	Asgrow	42	CMV,ZYMV	97,98,99
Midas	F1	Willhite	53	PM	99
Pic-N-Pic	F1	Seedway	50	—	99
Prelude II**	F1	Asgrow	40	PM,W MV,ZYMV	97-99
Sunbrite	F1	Rogers	43	—	95,98,99
Sunglo	F1	Rogers	40	PM	98,99
Sun Ray	OP	Petoseed	50	DM, PM	99
Zephyr*	F1	Johnny's	54	—	99
Yellow Straightneck					
Fortune*	F1	Rogers	39	—	99
Lemon Drop	F1	Asgrow	41	—	94-96,98,99
XPT1816	F1	Asgrow	—	—	99
Zucchini Squash					
ACX 34	F1	Abbott & Cobb	45	—	99
Declaration II**	F1	Asgrow	—	—	99
Dividend	F1	Rogers	46	CMV, W MV, ZYMV	98,99
Embassy	F1	Petoseed	49	—	99
Enterprise	F1	Rogers	—	—	97,99
Gold Rush (Yellow)	F1	Stokes	52	—	96-99
Independence II**	F1	Asgrow	41	W MV, ZYMV	99,99
RSQ-494	F1	Rogers	—	—	98,99
RSQ-496	F1	Rogers	—	—	98,99
Senator	F1	Asgrow	41	—	94-98,99
Spineless Beauty	F1	Sandoz Rogers	43	—	94-99

* Precocious Variety; **Transgenic Variety.

• = not available; — = none; from seed catalogues.

¹Type: F1 = Hybrid; OP = Open pollinated.

²Disease Claims: PM = Powdery Mildew; DM = Downy Mildew; ZYMV = Zucchini Yellow Mosaic Virus; W MV = Watermelon Mosaic Virus.

**TABLE 3. EARLY PRODUCTION AND GRADE DISTRIBUTION OF SELECTED SUMMER SQUASH VARIETIES
GROWN AT BREWTON EXPERIMENT FIELD**

Variety	Type	Stand %	Early marketable wt. lbs/a	Early US#1 wt. lbs/a	Early US#1 no. #/a
Zephyr	CN	100	6,028	6,028	13,721
Pic-N-Pic	CN	100	5,140	5,140	15,464
Prelude	CN	100	4,748	4,748	10,237
Gentry	CN	100	4,721	4,721	15,682
ACX 45	CN	100	4,688	4,688	11,326
Prelude II	CN	100	4,291	4,291	14,048
Crescent	CN	100	4,280	4,280	15,137
Dixie	CN	100	4,231	4,231	12,197
Sunbrite	CN	100	4,225	4,225	12,415
Sun Ray	CN	100	3,877	3,877	11,652
Midas	CN	100	3,741	3,741	10,999
Sunglo	CN	100	3,708	3,708	11,761
Liberator III	CN	100	2,929	2,929	7,187
ACX 45A	CN	100	2,793	2,793	4,1380
Destiny III	CN	100	2,793	2,793	7,2960
ACX 34	Z	100	5,135	5,135	14,810
<i>R</i> ²			0.20	0.20	
<i>CV</i>			46	46	
<i>lsd</i>			636	636	

**TABLE 4. EARLY PRODUCTION AND GRADE DISTRIBUTION OF SELECTED SUMMER SQUASH VARIETIES
GROWN AT E.V. SMITH RESEARCH CENTER**

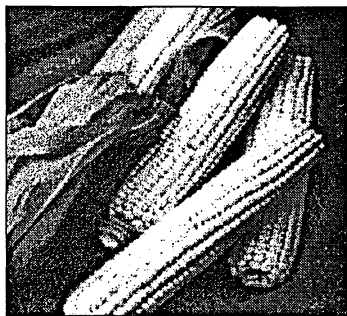
Variety	Type	Stand %	Early marketable wt. lbs/a	Early US#1 wt. lbs/a	Early US#1 no. #/a
XPT 1816	YSN	100	1,460	745	9,474
Lemondrop	YSN	100	1,430	1,100	8,930
Fortune	YSN	100	1,288	588	7,841
Embassy	Z	100	2,948	2,075	7,187
Independence II	Z	100	2,937	1,743	7,623
Declaration II	Z	100	2,793	1,748	8,494
Spinless Beauty	Z	100	1,917	1,024	5,881
Senator	Z	100	1,907	1,239	5,663
RSQ 499	Z	100	1,830	1,072	7,841
RSQ 498	Z	100	1,586	980	6,098
RSQ 496	Z	100	1,437	412	4,792
Enterprise	Z	100	1,141	730	6,861
RSQ 495	Z	100	880	222	3,485
Dividend	Z	100	844	358	2,723
RSQ 497	Z	100	749	525	2,831
Gold Rush	Z	100	198	68	653
RSQ 494	Z	100	157	157	871
<i>R</i> ²			0.74	0.68	
<i>CV</i>			37	50	
<i>lsd</i>			228	222	

TABLE 5. TOTAL PRODUCTION AND GRADE DISTRIBUTION OF SELECTED SUMMER SQUASH VARIETIES GROWN AT THE BREWTON EXPERIMENT FIELD

Variety	Type	Stand %	Total market-able wt lbs/a	Total US#1 wt. lbs/a	Total US#2 wt. lbs/a	Cull lbs/a	Total US#1 no. #/a	Total US#2 no. #/a	Total US# 1 #/a
Zephyr	CN	100	6,594	6,594	0	4,372	16,335	0	0.40
Pic-N-Pic	CN	100	6,229	6,229	0	3,507	21,018	0	0.31
Prelude	CN	100	5,783	5,783	0	2,668	13,939	0	0.49
Gentry	CN	100	5,734	5,734	0	2,292	20,364	0	0.28
ACX 45	CN	100	5,712	5,712	0	3,468	14,919	0	0.41
Dixie	CN	100	5,505	5,505	0	3,104	16,662	0	0.39
Crescent	CN	100	5,293	5,293	0	2,597	19,166	0	0.36
Prelude II	CN	100	5,184	5,184	0	1,574	19,384	0	0.28
Sunbrite	CN	100	5,004	5,004	0	2,728	16,226	0	0.31
Sun Ray	CN	100	4,922	4,922	0	2,178	16,880	0	0.29
Sunglo	CN	100	4,797	4,797	0	2,369	16,335	0	0.28
Midas	CN	100	4,312	4,312	0	2,483	14,484	0	0.29
Liberator III	CN	100	3,942	3,942	0	915	10,781	0	0.41
Destiny III	CN	100	3,937	3,937	0	1,168	10,128	0	0.47
ACX 45A	CN	100	3,218	3,218	0	0	5,009	0	0.65
ACX 34	Z	100	5,744	5,744	0	3,343	17,533	0	0.38
<i>R</i> ²			38	38					
<i>CV</i>			38	38					
<i>lsd</i>			642	642					

TABLE 6. TOTAL PRODUCTION AND GRADE DISTRIBUTION OF SELECTED SUMMER SQUASH VARIETIES GROWN AT E. V. SMITH RESEARCH CENTER

Variety	Type	Stand %	Total market-able wt lbs/a	Total US#1 wt. lbs/a	Cull lbs/a	Total US#1 no. #/a	Total US# 1 #/a
XPT 1816	YSN	100	3,882	3,882	1,764	21,236	0.18
Fortune	YSN	100	3,713	3,713	1,797	20,147	0.19
Lemondrop	YSN	100	2,034	2,034	2,819	11,761	0.17
RSQ 499	Z	100	7,122	7,122	3,968	20,909	0.34
RSQ 498	Z	100	6,290	6,290	862	20,038	0.31
Declaration II	Z	100	6,037	6,037	2,021	16,226	0.37
Independence II	Z	100	5,413	5,413	1,787	14,266	0.38
Embassy	Z	100	5,163	5,163	3,360	11,652	0.44
Spineless Beauty	Z	100	4,971	4,971	10,501	12,741	0.39
RSQ 496	Z	100	4,898	4,898	1,760	13,504	0.37
Senator	Z	100	4,711	4,711	1,416	11,979	0.38
RSQ 497	Z	100	3,970	3,970	216	10,672	0.37
Dividend	Z	100	3,874	3,874	194	10,454	0.37
RSQ 495	Z	100	3,642	3,642	257	10,890	0.33
RSQ 494	Z	100	3,642	3,642	48	11,326	0.32
Enterprise	Z	100	2,642	2,642	2,508	14,048	0.19
Gold Rush	Z	100	683	683	3,098	2,069	0.33
<i>R</i> ²			0.74	0.74			
<i>CV</i>			63	61			
<i>lsd</i>			499	499			



Sugary Enhanced White Sweet Corn Entries Yield as Well as 'Silver Queen' But Earlier



Kent Cushman, Thomas Horgan, and David Nagel

This study was located at the North Mississippi Research and Extension Center in Verona, Mississippi, on a Quitman silt loam soil. Ten entries of white sweet corn were planted into a randomized complete block design with four replications (Table 1).

Preplant fertilizer was broadcast at the rate of 40 pounds of N, 80 pounds of P_2O_5 , and 120 pounds of K_2O per acre. Plots were planted May 10, 1999 with a four-row Monosem vacuum seeder at the rate of 21,000 to 22,000 seeds per acre. Poor germination and dry soil moisture conditions at planting reduced plant stand significantly for some entries (Table 2). Plots were 23 feet long by eight rows wide. Only the center six rows were harvested for data. Row spacing was 30 inches. Herbicides were applied immediately after planting: CyPro 4L (at a rate of 1.2 quarts per acre), Dual 8E (at a rate of 1.5 pints per acre), Gramoxone Extra (at a rate of 1.5 pints per acre), and SurfAc (at a rate of one pint per acre).

When plants were one foot tall, Evik DG was applied as a directed spray at 2.5 pounds per acre. SurfAc, at 1.5%, was also included in the tank mixture. Plots were sidedressed with liquid 32-0-0 at the rate of 90 pounds of N per acre on June 10; the solution was banded about five inches to the side of each row and about one to two inches deep. Throughout ear development, pesticide applications were made with a tractor-mounted air-blast sprayer. Sevin WPS, Asana XL, or Thiodan EC were sprayed as needed for insect control.

Furrow irrigation was applied once at the beginning of tasseling but several weeks of very wet weather occurred afterward.

TABLE 1. WHITE SWEET CORN ENTRIES

Entry ¹	Seed source ²	Genetics ³	Days to harvest (from catalog)	Days to harvest (our trial)
Frosty	Seedway	se	70	58
94H263	Seedway	se	70	60
Sensation	Seneca, Seedway	se	70	65
Silver Princess	Rogers, Chesmore	se	75	60
Silver Choice	Seedway	se	75	65
Brilliance	Harris	se	79	65
Fantasia	Asgrow	se	82	65
Rising Star	Seedway	se	82	65
Silver King	Rogers, Chesmore	se	82	65
Silver Queen	Chesmore	su	89	72

¹ Entries listed in order of days to harvest as listed in seed catalogs or promotional literature.

² Seeds for this trial were purchased from, or donated by, these companies.

³ Homozygous or heterozygous sugary enhanced (se/se or se/su); or homozygous sugary (su/su).

Dry weather prevailed throughout the harvest period. Harvest began with 'Frosty' on July 7 and ended with 'Silver Queen' on July 21. Corn ears from each plot were separated into categories of marketable or cull and then trimmed, counted, and weighed.

There were no significant differences in yield between 'Silver Queen' and the remaining nine sugary enhanced cultivars (Table 2). However, days to harvest were seven to 14 days earlier for the sugary enhanced cultivars compared to 'Silver Queen' (Table 1).

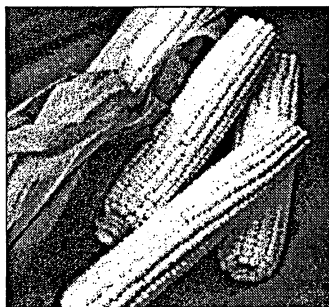
'Frosty' was the earliest cultivar, though its average ear weight was significantly less than any other entry (Table 2). In a 1998 trial at this location, 'Fantasia' performed as well as 'Brilliance'. However in this trial, 'Brilliance' yielded significantly more than 'Fantasia'. Plant stand for '94H263' was significantly lower than for any other entry.

TABLE 2. WHITE SWEET CORN YIELD AND PLANT STAND

Entry ¹	Yield <i>doz/a</i>	Yield <i>lbs/a</i>	Marketable ² %	Avg. ear wt. <i>oz</i>	Plant stand <i>plants/a</i>
Silver King	1,470	8,160	88	7.4	16,100
Brilliance	1,440	8,190	91	7.6	18,000
Silver Princess	1,280	7,040	89	7.3	16,200
Frosty	1,260	5,160	81	5.4	16,300
Rising Star	1,210	7,280	96	8.0	19,000
Silver Choice	1,210	7,180	87	7.9	15,000
Silver Queen	1,210	6,700	88	7.4	18,700
Sensation	1,110	6,350	84	7.6	15,200
94H263	1,030	5,210	96	6.7	9,200
Fantasia	970	5,400	94	7.4	12,200
<i>R</i> ²		<i>0.49</i>	<i>0.68</i>	<i>0.83</i>	<i>0.83</i>
<i>CV</i>		<i>20</i>	<i>20</i>	<i>5</i>	<i>10</i>
<i>lsd</i>		<i>2,000</i>	<i>7</i>	<i>0.6</i>	<i>2,250</i>

¹ Entries listed in order of yield (dozen ears per acre).

² Relative number of marketable ears as the percentage of total number harvested (marketable plus culls).



Sugary Enhanced Yellow Sweet Corn Entries Perform Better than 'Merit'



Kent Cushman, Thomas Horgan, and David Nagel

This study was located at the North Mississippi Research and Extension Center in Verona, Mississippi, on a Quitman silt loam soil. Ten entries of yellow sweet corn (Table 1) were planted into a randomized complete block design with four replications.

Preplant fertilizer was broadcast at the rate of 40 pounds of N, 80 pounds of P_2O_5 , and 120 pounds of K_2O per acre. Plots were planted May 10, 1999 with a four-row Monosem vacuum seeder at the rate of 21,000 to 22,000 seeds per acre. Poor germination and dry soil moisture conditions at planting reduced plant stand significantly for some entries (Table 2). Plots were

23 feet long by eight rows wide. Only the center six rows were harvested for data. Row spacing was 30 inches. Herbicides were applied immediately after planting: CyPro 4L (1.2 quarts per acre), Dual 8E (1.5 pints per acre), Gramoxone Extra (1.5 pints per acre), and SurfAc (one pint per acre). When plants were one foot tall, Evik DG was applied as a directed spray at 2.5 pounds per acre. SurfAc, at 1.5%, was also included in the tank mixture. Plots were sidedressed with liquid 32-0-0 at the rate of 90 pounds of N per acre on June 10; the solution was banded about five inches to the side of each row and about one to two inches deep.

Throughout ear development, pesticide applications were made with a tractor-mounted air-blast sprayer. Sevin WPS, Asana XL, or Thiodan EC were sprayed as needed

TABLE 1. YELLOW SWEET CORN ENTRIES

Entry ¹	Seed source ²	Genetics ³	Days to harvest (from catalog)	Days to harvest (our trial)
HMX-5346E	Harris	se	65	57
Champ	Asgrow	se	70	59
SX7006	Seneca	se	70	59
SX7202	Seneca	se	72	64
Kandy King	Rogers	se	73	59
XPH-3123	Asgrow	se	78	64
Kandy Plus	Rogers	se	79	65
GH-4881	Rogers	se	79	66
Merit	Asgrow	su	80	65
Miracle	Chesmore	se	84	64

¹ Entries listed in order of days to harvest as listed in seed catalogs or promotional literature.

² Seeds for this trial were purchased from, or donated by, these companies.

³ Homozygous or heterozygous sugary enhanced (se/se or se/su) or homozygous sugary (su/su).

for insect control. Furrow irrigation was applied once at the beginning of tasseling but several weeks of very wet weather occurred afterward. Dry weather prevailed throughout the harvest period. Harvest began with 'HMX-5346E' on July 7 and ended with 'GH-4881' on July 17. Corn ears from each plot were separated into categories of marketable or cull and then trimmed, counted, and weighed.

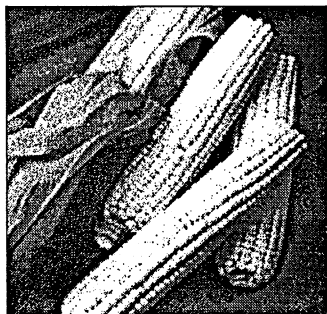
Four entries yielded significantly more dozen ears per acre than 'Merit' (Table 2). The average ear weight of one of these entries, 'Kandy Plus', was significantly greater than any other entry. The two earliest entries, 'HMX-5346E' and 'Champ', yielded significantly less than any of the other entries (Table 2). 'Champ' also produced the poorest plant stand.

TABLE 2. YELLOW SWEET CORN YIELD AND PLANT STAND

Entry ¹	Yield <i>doz/a</i>	Yield <i>lbs/a</i>	Marketable ² %	Avg. ear wt. <i>oz</i>	Plant stand <i>plants/a</i>
SX7202	1,600	9,410	88	7.8	15,600
Kandy Plus	1,550	11,030	92	9.5	19,000
Miracle	1,550	8,910	89	7.7	17,200
Kandy King	1,500	8,890	90	7.9	18,800
GH-4881	1,410	8,830	84	8.3	18,200
SX7006	1,320	8,110	88	8.2	16,800
Merit	1,300	7,910	89	8.2	17,300
XPH-3123	1,150	6,500	96	7.5	15,800
HMX-5346E	950	4,650	74	6.6	15,800
Champ	760	4,260	89	15	11,400
<i>R</i> ²	<i>0.84</i>	<i>0.83</i>	<i>0.66</i>	<i>0.79</i>	<i>0.84</i>
<i>CV</i>	<i>11</i>	<i>14</i>	<i>6</i>	<i>6</i>	<i>7</i>
<i>lsd</i>	<i>205</i>	<i>1,620</i>	<i>7</i>	<i>0.7</i>	<i>1,620</i>

¹ Entries listed in order of yield (dozen ears per acre).

² Relative number of marketable ears as the percentage of total number harvested (marketable plus culls).



Several Sweet Corn Varieties Show Good Yield and Quality



Eric Simonne, Edgar Vinson, Robert Boozer, Jim Pitts, and Randall Rawls

Sugar enhanced sweet corn varieties (*su/se*) were evaluated at the Chilton Area Horticulture Station (CAHS) in Clanton and sugar-enhanced (*sh₂*) varieties were evaluated at the Upper Coastal Plain Research Station (UCPRS) in Winfield (Tables 1 and 2). White and yellow *sh₂* varieties were separated by 300 feet because cross pollination alters grain characteristics. Sweetness of *sh₂* varieties will also be altered if cross pollination occurs with other corn types. At both locations, two-row plots 20 feet long and five feet wide were established. Within-row spacing was eight to 10 inches, creating a stand of approximately 26,000 plants per acre.

At CAHS corn was direct seeded on May 6. Fertilization consisted of a preplant application (per acre) of 75 pounds of nitrogen (N), phosphorus (P₂O₅), and po-

TABLE 1. RATINGS OF 1999 SWEET CORN VARIETY TRIALS¹

Location	CAHS	UCPRS
Weather	5	5
Fertility	5	5
Irrigation	5	5
Pests	5	5
Overall	4	4

¹See introduction for a description of rating scales.

tassium (K₂O) and a sidedress application of 60 pounds of N on June 10 for the *sh₂* test, and May 31 and June 10 for the *su/se* test. One preemergence herbicide, Aatrex, was used at a rate of one quart per acre. No fungicides or

TABLE 2. SEED SOURCE, TYPE, COLOR, AND EARLINESS OF SELECTED YELLOW AND WHITE SWEET CORN VARIETIES

Variety	Seed source	Color	Type	Days to harvest	Disease tolerance/resistance ¹	Years evaluated
Attribute (GSS-0966)*	Novartis	Y	sh ₂	78	CR, NCLB, SBW	99
Impulse	Novartis	Y	sh ₂	73	—	99
Pegasus	SeedWay	W	sh ₂	90	NCLB,SCLB	96,97,99
Prime Plus	Novartis	Y	sh ₂	78	CR, NCLB, SBW	97-99
Prime Time	Novartis	Y	sh ₂	79	NCLB, SBW	97-99
Punchline	Asgrow	Y	sh ₂	74	ANT,NCLS,SBW,SCLB	94-99
Silver King	Novartis	W	se	82	CR,NCLB,SBW	97-99
Silver Princess	Novartis	W	se	74	CR, NCLB, SBW	98,99
Silver Queen	SeedWay	W	su	92	NCLB,SBW,SCLB	94-99
SS 8101	A&C	W	sh ₂	81	NCLB, SBW	96,97,99
Sugarburst	Seneca	W	sh ₂	75	—	99
Treasure	Seed Way	W	sh ₂	83	NCLB, SBW	95,96,99
Vail	Novartis	W	sh ₂	78	NCLB, SBW	97,99
XPH-3113	Asgrow	W	se	69	SBW	98,99

*Transgenic hybrid

— = no information available.

¹Disease Tolerance Resistance: CR = Corn Rust; CS = Corn Smut; MDMV = Maize Dwarf Mosaic Virus; NCLB = Northern Corn Leaf Blight; SBW = Stewart's Bacterial Wilt; SCLB = Southern Corn Leaf Blight; ANT = Anthracnose.

insecticides were used. The test was irrigated throughout the growing season.

At UCPRS, corn was direct seed on May 18. On June 7, yellow and white varieties were fertilized with 1500 pounds per acre of ammonium nitrate. No pesticides were used.

At CAHS, *su/se* varieties were harvested on July 14 and July 20. The white and yellow *sh₂* varieties were harvested on July 27 at UCPRS. After harvest, ears were graded following the *Sweet Corn Grader's Guide* (Circular ANR-680 of the Alabama Cooperative Extension System). Yield (Tables 3 and 4) and ear characteristics (Tables 5 and 6) were determined.

TABLE 3. YIELD DATA OF SELECTED WHITE SWEET CORN VARIETIES GROWN AT THE CHILTON AREA HORTICULTURE STATION

Variety	Type	Yield <i>lbs/a</i>	Ear no. <i>#/a</i>	Ear set ht. <i>in</i>
Silver King	se	1,913	27,860	31
Silver Queen	su	1,370	31,400	23
Silver Princess	se	811	26,862	14
XP-3113	se	575	29,675	11
<i>R</i> ²		0.27	0.45	0.24
<i>CV</i>		83	7.5	84
<i>lsd</i>		420	1,300	3.2

TABLE 4. YIELD CHARACTERISTICS OF SELECTED SWEET CORN VARIETIES GROWN AT THE UPPER COASTAL PLAIN RESEARCH STATION

Variety	Type	Stand <i>%</i>	Yield <i>lbs/a</i>	Ear no. <i>#/a</i>	Ear set ht. <i>in</i>
Treasure	W <i>sh₂</i>	75	9,129	28,223	19
Vail	W <i>sh₂</i>	56	8,930	25,682	16
Pegasus	W <i>sh₂</i>	68	8,839	24,866	17
SS8101	W <i>sh₂</i>	69	7,732	23,323	17
Sugar Burst	W <i>sh₂</i>	64	7,659	22,960	18
Punchline	Y <i>sh₁</i>	79	9,492	28,133	15
Attribute GSS-0966	Y <i>sh₂</i>	56	5,028	15,881	10
Prime Plus	Y <i>sh₂</i>	31	3,185	9,347	8
Impulse	Y <i>sh₂</i>	39	5,381	14,157	5
Prime Time	Y <i>sh₂</i>	14	1,751	5,536	4
<i>R</i> ²			0.48	0.51	0.53
<i>CV</i>			46	43	42
<i>lsd</i>			2,300	3,380	5.4

TABLE 5. QUALITY RATINGS OF SELECTED WHITE SWEET CORN VARIETIES GROWN AT THE CHILTON AREA HORTICULTURE STATION

Variety	Type	Quality rating ¹	Tip cover rating ²	Ear fill rating	Eye appeal rating	Ear length <i>in</i>	Ear diameter <i>in</i>
Silver King	se	8.65	2.65	2.00	4.00	9.6	2.4
Silver Princess	se	9.50	4.00	2.25	3.25	8.6	2.9
Silver Queen	su	—	0.00	2.25	3.50	6.3	0.3
XP-3113	se	9.00	2.90	2.00	2.00	5.0	2.1
<i>R</i> ²		0.32	0.60	0.42	0.37	0.35	0.74
<i>CV</i>		40	49	39	48	45	30
<i>lsd</i>		0.73	1.03	4.50	4.13	0.36	5.4

¹Quality Rating is the sum of tip cover, ear fill, and eye appeal ratings.

²Tip cover, ear fill, and eye appeal ratings: 5 = excellent; 4 = good; 3 = fair; 2 = poor; 1 = very poor.

TABLE 6. EAR CHARACTERISTICS OF SELECTED SWEET CORN VARIETIES GROWN AT THE UPPER COASTAL PLAIN RESEARCH STATION

Variety	Type	Quality rating ¹	Tip cover rating ²	Ear fill rating	Eye appeal rating
Sugar Burst	W sh ₂	7.50	2.50	2.50	2.50
Pegasus	W sh ₂	7.00	2.25	2.25	2.50
Treasure	W sh ₂	6.75	2.00	2.25	2.50
SS8101	W sh ₂	6.00	2.00	2.00	2.00
Vail	W sh ₂	5.75	2.00	2.00	1.75
Punchline	Y sh ₂	7.50	2.50	2.50	2.50
Attribute	Y sh ₂	5.25	1.50	2.00	1.75
Prime Plus	Y sh ₂	4.25	1.50	1.25	1.50
Impulse	Y sh ₂	3.75	1.25	1.25	1.25
Prime Time	Y sh ₂	2.25	0.75	0.75	0.75
<i>R</i> ²		0.13	0.12	0.10	0.20
<i>CV</i>		29	29	30	36
<i>Isd</i>		2.0	0.90	0.90	1.20

¹Quality Rating is the sum of tip cover, ear fill, and eye appeal ratings.

²Tip cover, ear fill, and eye appeal ratings: 5 = excellent; 4 = good; 3 = fair; 2 = poor; 1 = very poor.



Last Year's Top Performing Okra Varieties Return This Year



Eric Simonne, Edgar Vinson, Arnold Caylor, and John Owen

Okra variety trials were conducted at the Piedmont Research Station (PRS) in Camp Hill and the North Alabama Horticultural Station (NAHS) in Cullman (Tables 1 and 2). The evaluation was conducted on bare ground with drip irrigation at PRS. At NAHS, silver plastic and drip irrigation were used.

Okra was direct seeded on May 27 at PRS on bare ground and on May 28 at NAHS on silver plastic. At both locations, within-row spacing was 18 inches, which created an approximate stand of 5,800 plants per acre.

At PRS, preplant fertilization consisted of 500 pounds per acre of 0-20-0 and 160 pounds per acre of 34-0-0 applied on May 24. A sidedress of NH_4NO_3 was applied at a rate of 60 pounds per acre on July 14, August 2, August 4, and September 9. Weeds were controlled by tilling and herbicide application. Herbicides used were Fusilade at a rate of four ounces per acre on June 9 and September 7.

At NAHS, preplant fertilization consisted of an application of 80 pounds of nitrogen applied on April 19. Okra plants were injected with 10 pounds of nitrogen per acre once per week from June 4 through August 6. Insects were controlled by applications of Mattach (at a rate of two quarts per acre) on July 15, July 22, July 26, and July 28. Fungicides used were Bravo (at a rate of three pints per acre) on July 15 and July 28; and

TABLE 1. RATINGS OF 1999 OKRA VARIETY TRIALS¹

Location	PRS	NAHS
Weather	5	5
Fertility	4	5
Irrigation	5	5
Pests	5	5
Overall	4	5

¹See introduction for a description of rating scales.

Penncozeb (at a rate of two pounds per acre) on July 22.

Plots were harvested three times per week from August 2 through September 24 at PRS and twice per week from July 12 through August 5 at NAHS. At PRS, pods were graded as fancy (pods up to 3.5 inches), choice (pods between 3.5 and 4.5 inches), and jumbo (pods longer than 4.5 inches but still tender) (Tables 3 and 4). At NAHS, pods were harvested during the fancy stage (Table 5).

At PRS 'Cajun Delight', 'Annie Oakley II', and 'Mita' were the top yielding varieties. At NAHS 'Annie Oakley', 'Spike', and 'Rani' were the top varieties. In both tests, the standard 'Clemson Spineless' was outperformed by several varieties. The white-pod variety 'White Velvet' did not perform well in this trial.

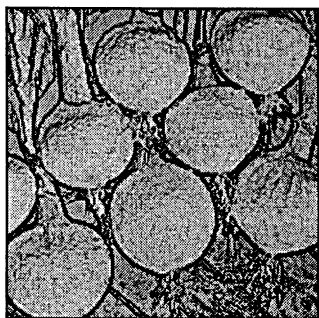
TABLE 2. SEED SOURCE, EARLINESS, AND DISEASE CLAIMS OF SELECTED OKRA VARIETIES

Variety	Type	Seed source	Days to harvest	Pod color	Disease claims ¹	Years evaluated
Annie Oakley II	F1	Petoseed	48	Green	—	97-99
Cajun Delight	F1	Park Seed	52	Green	—	97-99
Clemson Spineless	OP	Asgrow, Petoseed, Kelly	55	Green	—	97-99
Emerald	OP	Advance Seed	55	Green	—	98,99
Spike	F1	Willhite	48	Green	YVMV	98,99
White Velvet	OP	Montgomery Seed	—	White	—	98,99
Rani	F1	Willhite	46	Green	YVMV	99
Mita	F1	Willhite	49	Green	YVMV	99
Perkins Long Pod	OP	Local Store	—	Green	—	99

¹ Disease Claims: YVMV=Yellow Vein Mosaic Virus. — = Not found; from seed catalogues.

TABLE 5. EARLY AND TOTAL YIELD OF SELECTED OKRA VARIETIES GROWN AT THE NORTH ALABAMA HORTICULTURE STATION

Variety	Early marketable wt. <i>lbs/a</i>	Early pod no. <i>#/a</i>	Early fruit wt. <i>lb/pod</i>	Total marketable wt. <i>lbs/a</i>	Total pod no. <i>#/a</i>	Total fruit wt. <i>lb/pod</i>
Annie Oakley II	597	19,914	0.031	1,448	64,097	0.024
Spike	523	23,647	0.023	1,297	61,452	0.021
Rani	345	13,691	0.025	901	44,961	0.020
Mita	380	15,557	0.024	843	49,940	0.016
Emerald	191	9,179	0.027	580	29,715	0.020
Clemson Spineless	128	3,889	0.033	549	21,003	0.027
White Velvet	14	467	0.030	348	10,579	0.033
<i>R</i> ²	0.70			0.57		
<i>CV</i>	48			44		
<i>lsd</i>	21			53		



Vidalia Onion Variety Trials Held in Georgia

George Boyhan, Reid Torrance, Bill Randle, Pam Lewis, and Mindy Linton

Vidalia onion variety trials were held at two locations in Georgia (Tables 1 and 2). One trial was held at the Bamboo Farm and Coastal Garden in Savannah, Georgia. The second trial was held at the Vidalia Onion and Vegetable Research Farm just outside of Reidsville, Georgia. This second location is a new acquisition for the University of Georgia. This location is in the heart of the onion-growing region and will be the primary location for future vegetable research in this part of the state.

Savannah Trial

The trial at the Bamboo Farm in Savannah had 20 onion entries. Each entry was started from seed in a high-density plantbed with a between-row spacing of one foot. The plantbed was seeded on September 23, 1998. A Plant-It Jr. walk behind planter with plate number 1002-5 (radish-medium) was used to seed these beds. The fertility program on the plantbeds consisted of 5-10-15 with 5% sulfur applied at a rate of 1,400 pounds per acre incorporated preplant. Immediately after seeding, 10-34-0 was applied at a rate of 23 gallons per acre. On October 20, $\text{Ca}(\text{NO}_3)_2$ was applied at a rate of 450 pounds per acre to the plantbeds. Calcium nitrate was also applied at a rate of 225 pounds per acre on November 10.

Onion plants were harvested from the plantbeds and transplanted to their final spacing on December 17 and December 18. The experiment was arranged in a randomized complete block design with three replications. Each plot consisted of four rows of onions with an in-row spacing of four inches and a between-row spacing of 14 inches. Each plot was 20 feet long. There was a wheel row between each plot so that the center-to-center spacing between plots was six feet. The fertility program consisted of 5-10-15 with 5% sulfur applied at a rate of 1,000 pounds per acre preplant. In addition, $\text{Ca}(\text{NO}_3)_2$ was applied at a rate of 200 pounds per acre on January 27, February 8, February 26, March 2, and March 22, 1999. Weeds were controlled by an application of Goal

herbicide on March 2 at a rate of eight ounces per acre as well as hand weeding when necessary.

Onions were harvested beginning on April 15 as they matured. Plots were considered mature when 50% of the tops had gone down. Additional harvests were conducted on April 26 and May 17. Harvested onions had their tops and roots clipped and weights were taken immediately. Yields are reported as 60-pound field bags to reflect the fact the onions were not cured or graded before weighing.

A five-gallon bucket of onions was selected at random from each plot and graded as to size for those onions harvested on May 17. The grading sizes consisted of small (less than two inches), medium (greater than two inches and less than three inches), jumbo (greater than three inches and less than four inches), and colossus (greater than four inches).

Pungency numbers are a measure of pyruvate, which is produced in conjunction with pungency-producing compounds from macerated onions. The higher the value the more pungent the onions. Values below 5 generally indicate a mild onion.

Reidsville Trial

The trial at the Vidalia farm consisted of 15 entries originally; however, four of these entries were left out due to poor stand. The plants were grown from seed by a local grower and transplanted to final spacing on November 18, 1998 at the Vidalia Farm. Each plot was 40 feet long and consisted of four rows of onions with an in-row spacing of four inches and a between-row spacing of 18 inches. Harvest data were based on a ten-foot section from each of these plots. The experimental design was a randomized complete block design with three replications.

The fertility program consisted of 200 pounds per acre of 18-46-0 applied on December 15. In addition, 370 pounds per acre of 6-12-18 and 280 pounds per acre of 6-18-18 were applied to the plots on January 11, 1999

and January 27, respectively. Finally, 170 pounds per acre and 180 pounds per acre of Ca(NO₃)₂ were applied on February 12 and March 1, respectively. Weed control consisted of 1.5 pints of Goal and Prowl herbicides applied two weeks after transplanting.

Onions were harvested at the Vidalia Farm on April 19, April 22, and April 29 as the onions matured. Onions were considered mature when 50% of the tops were down. A ten-bulb sample from each plot was weighted and measured for bulb width.

At the Bamboo Farm yields ranged from 825 to 321 field bags per acre (Table 1). The lowest yielding varieties were also the earliest. This is a reflection of the late planting date, December 17 and December 18, 1998, rather than variety performance. Early varieties reach maturity (tops go down) regardless of the size of the bulbs.

For best performance with early varieties, they should be planted to their final spacing by mid-November. Varieties 'Sunex 1519' and 'SRO 1519' are the same variety, they were inadvertently entered twice in the trial.

Pungencies ranged from a high of 6.2 for 'Sweet Advantage' to a low of 3.8 for RCS 1938. Overall, the pungency values were higher than in past years due to the relatively dry winter.

Of the 14 varieties that were graded by size at the Bamboo Farm, six had combined percentages of jumbo and colossus sizes below 80%. Typically, growers expect to see 80% or more of their onions in these classes.

The trial at the Vidalia Farm showed no significant difference between yields for the varieties evaluated. There were, however, differences for bulb weight and size (Table 2).

TABLE 1. VIDALIA ONION VARIETY TRIALS, BAMBOO FARM, SAVANNAH, GEORGIA

Variety	Company	Yield per acre ¹	Harvest date ²	Soluble solids	Pungency	Percent harvest ³			
						Small	Medium	Jumbo	Colossus
Sweet Success(1514)	Sunseeds	639	5/17	6.7	5.7	3	16	70	11
Granes 33	Asgrow Seed	566	5/17	6.5	4.5	7	32	58	4
XP 6712	Asgrow Seed	688	5/17	6.1	4.5	2	14	77	7
Sunex 1519	Sunseeds	695	5/17	6.5	4.7	2	16	73	8
Pegasus	Asgrow Seed	816	5/17	6.6	5.5	1	8	69	21
Savannah Sweet	Petoseed	693	5/17	5.8	5.1	6	25	5	4
PS 7092	Petoseed	646	5/17	6.5	4.5	4	21	60	15
1032	D. Palmer Seed	501	4/15	7.1	5.3				
Sweet Advantage(1058)	D. Palmer Seed	506	4/15	7.6	6.2	7	33	58	33
DPSX 1035	D. Palmer Seed	591	5/17	7.1	4.2	4	20	66	10
Southern Honey	D. Palmer Seed	644	5/17	6.3	4.4	3	12	72	13
Equanex	Petoseed	703	5/17	6.5	5.6	1	14	64	21
SRO 1519	Sunseeds	820	5/17	6.3	5.2				
SSC 6389	Shamrock	321	5/17	7.1	5.1				
RCS 1919	Rio Colorado	340	4/15	7.4	4.6				
RCS 1938	Rio Colorado	746	5/17	6.2	3.8	1	18	73	8
XP 6846	Asgrow Seed	825	5/17	6.3	5.8	1	22	69	8
XP 6995	Asgrow Seed	736	5/17	7.9	5.0	2	16	69	13
WI-3115	Wannamaker	374	4/15	7.3	5.3				
WI-609	Wannamaker	406	4/15	6.3	4.5				
<i>R</i> ²		0.79		0.88	0.36				
<i>CV</i>		55		9	20				
<i>Isd</i>		140		0.4	1.7				

¹ Yields are reported as 60-pound field bags to reflect the fact that onions were not cured or graded before weighing.

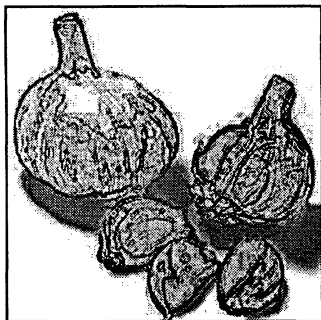
² All harvest dates are in 1999.

³ The early varieties were not graded by size.

**TABLE 2. VIDALIA ONION AND VEGETABLE RESEARCH FARM VARIETY TRIAL 1998-1999,
REIDSVILLE, GEORGIA**

Entry	Company	Harvest date	Yield ¹ bags/a	Weight/bulb oz	Size/bulb in.
RCS 1027	Rio Colorado	4/22/99	796	12	3.7
2012	Global Seed	4/29/99	788	12	3.7
XP 6712	Asgrow Seed	4/29/99	787	12	3.7
RCS 1919	Rio Colorado	4/19/99	786	11	3.5
Mr. Max	Rio Colorado	4/29/99	696	11	3.6
Sweet Vidalia	Rio Colorado	4/22/99	695	11	3.6
RCS 1063	Rio Colorado	4/19/99	672	12	3.5
Sweet Melody	Rio Colorado	4/29/99	671	12	3.7
1032	D. Palmer Seed	4/22/99	646	11	3.5
Sweet Success (1514)	Sunseed	4/22/99	643	12	3.8
Sweet Advantage (1058)	D. Palmer Seed	4/19/99	630	9	3.3
<i>R</i> ²			0.51	0.63	0.66
<i>CV</i>			15	13	5
<i>lsd</i>			NS	1.9	0.2

¹Yields are reported as 60-pound field bags to reflect the fact that onions were not cured or graded before weighing.



Evaluation of Garlic Varieties

George Boyhan, Reid Torrance, Pam Lewis, and Mindy Linton

Garlic varieties were evaluated in a replicated trial at the Bamboo Farm and Coastal Garden in Savannah, Georgia. The experiment was a randomized complete block design with seven varieties and four replications. Each plot consisted of two rows of garlic cloves planted with an in-row spacing of three inches and a between row spacing of 12 inches. Each plot was five feet long. Cloves were planted at the Bamboo Farm on December 8, 1999 and at the on-farm location on November 12, 1999.

There were ten garlic varieties evaluated in single observational plots at the Bamboo Farm. In addition, seven varieties were planted on a local farm in Tattnall County. These on-farm observational plots consisted of four rows planted with an in-row spacing of four inches and a between-row spacing of 18 inches. These plots were 75 feet long. A ten-foot section of each plot were harvested and weighed.

The fertility program at the Bamboo Farm consisted of 1000 pounds per acre of 5-10-15 fertilizer with 5% sulfur applied preplant. In addition, $\text{Ca}(\text{NO}_3)_2$ was applied at a rate of 200 pounds per acre on January 27, February 8, March 2, and March 22. $\text{Ca}(\text{NO}_3)_2$ was also applied at a rate of 200 pounds per acre on June 4 to the late varieties 'California Late' and '5150'. Weeds were controlled by hand weeding. The fertility program at the

on-farm location followed recommendations for onions on Coastal Plain soils.

Garlic was harvested at the Bamboo Farm when bulbs attained sufficient size, approximately 2.5 inches across. On-farm (Tattnall County) garlic was harvested on June 2 and at the Bamboo Farm on June 3 and July 10. The harvest date for the on-farm garlic coincided with the grower's elephant garlic harvest.

The yield per acre at the Bamboo Farm ranged from 14,302 pounds per acre for 'California Early' to 4,124 pounds per acre for 'California Late' (see table). The early varieties, 'Chinese' and 'Ex 106' were harvested on June 3, but were probably ready one month prior to this, based on the condition of the bulbs and tops. The late season material also could have remained in the field longer except for the higher temperatures at this time of year.

Of the seven varieties planted on-farm only three are listed: '4050', '2550', and 'California Early'. Two of the early varieties 'Chinese' and 'Ex 106' had rotted in the ground presumably because we attempted to harvest them too late. We were unable to get back to this grower to harvest the later material, 'California Late' and '5150'. We also list in the observational table 'Elephant Garlic', which this grower produces, for comparison purposes. The USDA material is from the germplasm collection in Pullman, Washington.

**GARLIC VARIETY TRIAL, BAMBOO FARM AND COASTAL GARDENS, SAVANNAH, GEORGIA, AND ON-FARM,
TATTNALL COUNTY, GEORGIA**

Cultivar	Source	Location	Yield <i>lbs/a</i>	Number of bulbs/a	Wt. of 10 bulbs <i>oz</i>	Maturity
California Early	Rogers Foods Inc.	Bamboo Farm	14,302	78,408	25.6	Midseason
Chinese	Rogers Foods Inc.	Bamboo Farm	6,171	36,300	25.2	Early
2550	Basic Veg. Products	Bamboo Farm	9,511	65,340	21.5	Midseason
Ex 106	Basic Veg. Products	Bamboo Farm	9,656	65,340	20.7	Early
4050	Basic Veg. Products	Bamboo Farm	10,019	50,820	29	Midseason
California Late	Rogers Food Inc.	Bamboo Farm	4,124	65,340		Late
5150	Basic Veg. Products	Bamboo Farm	6,935	73,326		Late
<i>R</i> ²			<i>0.61</i>	<i>0.66</i>		
<i>CV</i>			<i>49</i>	<i>32</i>		
<i>lsd</i>			<i>5,189</i>	<i>26,178</i>		
Observational						
4050	Basic Veg. Products	On-farm	12,923	-	26.9	Midseason
2550	Basic Veg. Products	On-farm	10,091	-	24.8	Midseason
California Early	Rogers Foods Inc.	On-farm	5,445	-	16.3	Midseason
Elephant Garlic	Dasher Farms	On-farm	14,883	-		Midseason
PI 515971	USDA	Bamboo Farm	8,422	92,928	41.5	Midseason
PI 540350	USDA	Bamboo Farm	6,970	66,792		Late
PI 540354	USDA	Bamboo Farm	3,485	75,504		Midseason
PI 540368	USDA	Bamboo Farm	11,616	87,120		Midseason
PI 540380	USDA	Bamboo Farm	8,422	78,408		Midseason
PI 543048	USDA	Bamboo Farm	3,311	52,272		Midseason
W612840	USDA	Bamboo Farm	11,616	55,176		Early
W6 12844	USDA	Bamboo Farm	8,131	52,272		Midseason
W6 8409	USDA	Bamboo Farm	6,098	66,792		Late
W6 8404	USDA	Bamboo Farm	3,775	49,368		



Tropical Pumpkin Hybrid Evaluation

Donald N. Maynard

Short-vine tropical pumpkin (*Cucurbita moschata*) experimental hybrids were evaluated in the spring 1999 season at the Gulf Coast Research and Education Center, Bradenton, Florida.

The EauGallie fine sand was prepared in late February by incorporation of 0-0.8 pound of N-P₂O₅-K₂O per 100 linear bed feet (lbf). Beds were formed and fumigated with methylbromide:chloropicrin, 67:33 at 2.3 pounds per 100 lbf. Banded fertilizer was applied in shallow grooves on the bed shoulders at 2.34-0-3.25 pounds of N-P₂O₅-K₂O per 100 lbf after the beds were pressed and before the black polyethylene mulch was applied. The total fertilizer applied was equivalent to 203-70-283 pounds of N-P₂O₅-K₂O per acre. The final beds were 32

inches wide and eight inches high, and were spaced on five foot centers with six beds between seepage irrigation/drainage ditches which were on 41-foot centers.

Fourteen hybrids were direct seeded on March 24 in holes four feet apart that were punched in the black polyethylene mulch. The four-foot long plots contained six plants each. Weed control in row middles was by cultivation and application of paraquat. Pesticides were applied as needed for control of silverleaf whitefly (endosulfan, abamectin, and ultrafine oil), downy mildew (chlorothalonil and azoxystrobin), and worms (*Bacillus thuringiensis* and methomyl). The pumpkins were harvested on June 24 and the resulting data shown in Tables 1, 2, 3, and 4.

TABLE 1. YIELD, AVERAGE FRUIT WEIGHT, LOCATION OF FRUIT, VINE LENGTH, FLESH THICKNESS, SOLUBLE SOLIDS, POLAR: EQUATORIAL RATIO, AND FRUIT PER PLANT OF TROPICAL PUMPKIN HYBRIDS, SPRING 1999

Entry	Yield cwt/a ¹	Avg fruit wt. lbs	-Location of fruit- crown %	vine %	Longest vine ft	Flesh thickness in	Soluble solids %	P:E ratio	Fruit per plant
G38-2-28 x La Primera	893 a ²	8.4 a	36 b	64 a	26.6 ab	2.2 a	5.4 a	0.70 bc	5.3 a
G38-2-53 x Soler	793 ab	6.9 a-d	57 b	39 ab	7.4 c	1.6 b	5.3 a	0.69 bc	5.5 a
G38-2-45 x La Primera	698 a-c	7.2 a-c	49 b	51 a	12.8 bc	1.8 ab	5.2 a	0.72 bc	4.5 ab
G38-2-22 x Seminole	697 a-c	7.7 ab	23 b	77 a	20.6 a-c	1.9 ab	4.9 a	0.83 b	5.0 ab
G38-2-45 x Soler	635 a-c	7.2 a-c	57 b	43 a	16.3 bc	1.4 b	4.3 a	0.68 bc	4.5 ab
G38-2-47 x Seminole	595 b-d	4.7 d	53 b	47 a	7.2 c	1.9 ab	5.8 a	0.77 bc	6.0 a
TP241 x TP411-1	579 b-d	5.7 b-d	56 b	44 a	9.8 bc	1.6 b	5.3 a	0.98 a	5.0 ab
C42-1-9 x La Segunda	574 b-d	4.6 d	50 b	50 a	10.8 bc	1.6 ab	4.6 a	0.72 bc	5.9 a
G38-2-28 x La Segunda	573 b-d	8.2 a	31 b	69 a	11.4 bc	2.0 ab	4.9 a	0.69 bc	3.4 b
G38-2-33 x La Segunda	534 b-d	5.6 b-d	59 b	41 a	15.8 bc	1.7 ab	5.6 a	0.62 c	4.4 ab
G38-2-33 x Soler	531 b-d	7.2 a-c	49 b	51 a	35.6 a	1.8 ab	4.8 a	0.61 c	3.4 b
G38-2-15 x La Segunda	530 b-d	5.3 cd	39 b	61 a	10.0 bc	1.9 ab	4.8 a	0.79 b	5.1 ab
TP241 x TP413	511 cd	5.3 cd	41 b	59 a	9.5 c	1.6 b	5.2 a	0.97 a	5.0 ab
C42-1-9 x La Primera	348 d	4.7 d	95 a	5 b	7.1 c	1.5 b	4.9 a	0.81 b	4.6 ab

¹ Acre= 8712 linear bed feet.

² Mean separation in columns by Duncan's multiple range test, 5% level.

TABLE 2. FLOWER HABITS OF TROPICAL PUMPKIN HYBRIDS, SPRING 1999

Entry ¹	First open flower		Nodes from crown	
	Staminate	Pistillate	Staminate	Pistillate
	DAP ¹		No.	
TP241 x TP411-1	51 a	47 b	3.5 a	9.5 ab
TP241 x TP413	52 a	49 a	2.5 a	10.5 a
C42-1-9 x La Primera	46 bc	35 c	3.0 a	6.0 bc
C42-1-9 x La Segunda	45 cd	34 c	3.0 a	5.0 c
G38-2-15 x La Segunda	47 b	36 c	2.5 a	7.5 a-c
G38-2-22 x Seminole	46 bc	35 c	2.5 a	7.0 a-c
G38-2-28 x La Primera	46 bc	36 c	2.5 a	6.0 bc
G38-2-28 x La Segunda	46 bc	36 c	2.0 a	6.0 bc
G38-2-33 x La Segunda	47 bc	36 c	2.0 a	7.5 a-c
G38-2-33 x Soler	43 d	35 c	3.0 a	6.0 bc
G38-2-45 x La Primera	46 bc	36 c	2.5 a	6.0 bc
G38-2-45 x Soler	45 cd	34 c	2.5 a	6.5 bc
G38-2-47 x Seminole	45 cd	35 c	2.5 a	7.0 a-c
G38-2-53 x Soler	45 cd	35 c	3.5 a	7.0 a-c

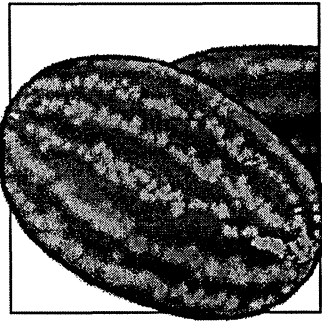
¹ Days after planting

TABLE 3. FRUIT SHAPE DISTRIBUTION OF TROPICAL PUMPKIN HYBRIDS, SPRING 1999

Entry	Fruit shape (%)				
	Variable	Round	Flat	Pear	Oval
TP241 x TP411-1	0	59	3	0	38
TP241 x TP413	0	76	6	1	17
C42-1-9 x La Primera	0	51	37	10	2
C42-1-9 x La Segunda	3	16	57	14	10
G38-2-15 x La Segunda	9	43	29	13	6
G38-2-22 x Seminole	2	36	50	0	12
G38-2-28 x La Primera	0	17	81	2	0
G38-2-28 x La Segunda	0	0	85	15	0
G38-2-33 x La Segunda	2	32	64	2	0
G38-2-33 x Soler	0	5	95	0	0
G38-2-45 x La Primera	0	15	81	2	2
G38-2-45 x Soler	0	12	88	0	0
G38-2-47 x Seminole	2	54	36	0	8
G38-2-53 x Soler	2	17	78	3	0

TABLE 4. FRUIT WEIGHT DISTRIBUTION OF TROPICAL PUMPKIN HYBRIDS, SPRING 1999

Variety	Weight (lbs)					
	≥ 4.0	4.1	6.1-8.0	8.1-12.0	12.1-16.0	<16.0
	%					
TP241 x TP411-1	20	48	27	3	0	2
TP241 x TP413	20	52	26	2	0	0
C42-1-9 x La Primera	44	34	17	5	0	0
C42-1-9 x La Segunda	56	19	11	14	0	0
C38-2015 x La Segunda	60	13	13	0	13	1
G38-2-22 x Seminole	4	24	18	30	14	0
G38-2-28 x La Primera	12	17	17	34	17	3
G38-2-28 x La Segunda	13	23	25	23	15	1
G38-2-33 x La Segunda	23	28	15	25	9	0
G38-2-33 x Soler	27	29	10	17	12	5
G38-2-45 x La Primera	17	22	17	43	1	0
G38-2-45 x Soler	18	33	27	16	4	2
G38-2-47 x Seminole	53	26	11	8	2	0
G38-2-53 x Soler	28	25	16	23	3	5



Watermelon Variety Trial in Eastern Georgia

George Boyhan and Darbie Granberry

Seed for the trial were sown on April 15, 1999 in artificial media under greenhouse conditions. The site for the trial was prepared with the application of one ton of lime per acre. In addition, 400 pounds per acre of 15-0-15 fertilizer was applied preplant and incorporated on May 10. Seedlings were transplanted on May 12. The in-row spacing was five feet and the between-row spacing was six feet. Each plot consisted of 10 plants and the experimental arrangement was a randomized complete block design. Curbit herbicide was applied at a rate of 0.75 pound active ingredient per acre in a minimum of 30 gallons of water. In addition, hand weeding was used as needed. An additional application of NH_4NO_3 was applied on July 1 at a rate of 200 pounds per acre.

Fruit were harvested on July 14 and July 15 and the total weight and count of fruit were recorded. In addi-

tion, two representative fruit from each plot were selected and additional measurements recorded. This included the fruit length, width, rind depth, and soluble solids (percent sugar). Finally, the flesh color and fruit type were also noted.

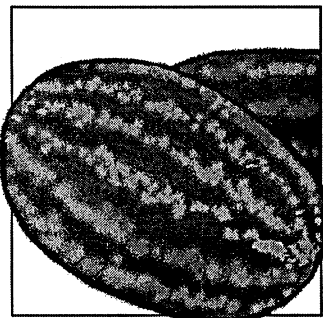
The range for yield was a high of 33,875 pounds per acre for 'Revolution' to a low of 6,912 pounds per acre for 'Big Stripe' (see table, next page). Sugar content ranged from 9.8% for 'Boston' to 7.1% for 'Huck Finn'. With an lsd of 1.6 only 'Freedom' and 'Huck Finn' were significantly less sweet than 'Boston'.

Most of the entries in the trial were Allsweet melon types. Four of the entries were triploid (seedless) types. Only one was a yellow fleshed variety.

**WATERMELON VARIETY TRIAL RESULTS 1999,
VIDALIA ONION AND VEGETABLE RESEARCH FARM, REIDSVILLE, GEORGIA**

Entry	Source	Yield/acre <i>lbs</i>	Fruit length <i>in</i>	Fruit width <i>in</i>	Rind thickness <i>in</i>	Fruit weight <i>lbs</i>	Soluble solids %	Flesh color	Fruit type ¹
430	Abbott & Cobb	20,546	13.6	7.9	0.8	12	8.3	Red	A
510	Abbott & Cobb	21,108	10.0	14.7	0.6	11	8.8	Red	CST
800	Abbott & Cobb	19,566	12.6	8.5	0.7	13	9.1	Red	A
900	Abbott & Cobb	13,946	13.0	8.5	0.8	11	9.0	Red	A
910	Abbott & Cobb	10,077	14.6	7.7	0.8	13	9.0	Red	A
5032	Abbott & Cobb	26,866	9.0	8.7	0.7	12	8.3	Red	CST
5044	Abbott & Cobb	19,156	10.9	8.6	0.8	11	9.2	Red	CST
Athens	Sunseeds	22,778	12.7	8.3	0.7	13	9.2	Red	A
AU-Producer	Auburn University	8,005	9.8	8.9	0.7	13	8.5	Red	CS
Big Stripe	Wilhite Seed	6,912	12.8	8.2	0.8	16	8.5	Red	J
Boston	Sunseeds	17,834	9.1	8.5	0.6	9	9.8	Red	A
Constitution	Sunseeds	22,187	11.4	8.4	0.8	12	9.5	Red	A
Delta	Petoseed	18,765	11.7	8.2	0.7	13	9.1	Red	A
Ecuadorian	Gene Hunter	15,329	9.5	6.9	0.7	10	8.8	Red	GI
Festival	Wilhite Seed	13,228	12.9	8.1	1.1	11	8.2	Red	A
Freedom	Sunseeds	22,368	10.6	8.3	1.0	12	8.1	Red	BJ
AU-Golden Producer	Auburn University	15,696	9.6	8.9	0.8	13	8.7	Yellow	CS
HMX 7928	Harris Moran	12,389	9.4	7.8	0.9	8	9.6	Red	BI
Huck Finn	Harris Moran	10,952	11.6	7.8	0.8	12	7.1	Red	J
Millionaire	Harris Moran	18,037	9.9	8.1	1.0	12	8.7	Red	CST
Pinata	Wilhite Seed	27,152	13.7	8.3	0.8	16	8.8	Red	A
Revolution	Sunseeds	33,875	13.6	8.0	1.1	13	8.5	Red	A
Sentinel	Petoseed	19,232	12.8	8.3	0.8	16	8.5	Red	A
Starbrite	Asgrow	29,719	13.4	8.5	0.8	16	8.6	Red	J
Stargazer	Asgrow	18,480	14.9	7.9	0.8	14	8.5	Red	A
Stars & Stripes	Asgrow	19,943	13.8	7.7	0.8	13	8.6	Red	J
Sweet Scarlet	Auburn University	19,050	9.3	8.7	0.7	11	8.5	Red	CS
WX8	Wilhite Seed	20,778	14.6	8.1	0.7	13	8.9	Red	J
<i>R</i> ²		<i>0.38</i>					<i>0.33</i>		
<i>CV</i>		<i>62</i>					<i>14</i>		
<i>lsd</i>		<i>NS</i>					<i>1.6</i>		

¹ Fruit Type: A = Allsweet, CST = Crimson Sweet Triploid, J = Jubilee, GI = Gray Icebox, BJ = Black Jubilee, BI = Black Icebox, CS = Crimson Sweet.



Seedless Watermelon Variety Trial in Southeast Virginia



Bob Bevacqua

This paper reports on an effort to identify varieties of seedless or triploid watermelon (*Citrullus lanatus*) for commercial production in the tidewater region of Southeast Virginia. The criteria used to evaluate the varieties were (1) earliness for a market window of July 15 to August 7, (2) ease of propagation and seedling vigor, (3) number of marketable melons per vine, (4) weight of melon, (5) sweetness, and (6) red flesh color. The varieties selected for evaluation had demonstrated considerable potential for commercial production in earlier trials in Florida (Maynard 1997) and North Carolina (Schultheis 1997).

A secondary goal was to compare propagation, cultural practices, and yield between seedless and standard or seeded watermelon

Seeds of five seedless varieties were started on May 1, 1999, following the propagation procedures outlined by Maynard (1996). Seedlings were transplanted to the field on May 20. The replicated plots were 30 feet long and had four plants each and were repeated three times in a randomized complete block. Plant spacing was four feet by six feet, which results in a plant population of 1,815 plants per acre. The standard varieties, 'Royal Flush' and 'Carnival', were planted on all sides of the plots to provide pollen. All other cultural practices followed the guidelines outlined in Bevacqua (1999). Yield data was recorded on July 27 or 88 days after seeding in a once-over-harvest.

All the varieties included in this study were found to be suitable for commercial production in Southeast Virginia. 'Crimson Trio', however, demonstrated the most promise (see table). It was judged an early variety because it produced a fruit with a sweetness of over 10% Brix and a red flesh color in 88 days. It propagated easily, no mortality was observed following transplanting, and it ranked high in number of melons per vine and weight of melons. It is an established variety that is widely

grown in other areas of the United States. 'Tri-X Carousel' displayed the same desirable qualities as 'Crimson Trio', with one important exception. Following transplanting, it suffered 25% mortality in the field.

Seedless watermelon is far more difficult to propagate than standard melons due to very specific requirements for soil temperature and moisture. The former must be started in the greenhouse, whereas the latter can be direct seeded. The former can also be lacking in early vigor and this leads to high mortality following field planting. This was true for 'Tri-X Carousel', 'RWM 8073', and 'Tri-X Shadow' (see table).

In seedless plantings, standard plants are required as pollenizers at a ratio of one standard for every two seedless plants. This is most easily accomplished by planting one row of standards for every two rows of seedless. The same spacing can be used for both types. This makes field management more complex. Standard plants need to be direct seeded in the field on the same day the seedless are started in the greenhouse. Harvest operations become more complex also as each type requires separate operations. It is important to use a pollenizer that is marketable because one-third of all melons produced in the field will be of this type. The fruit of the pollenizer should be easily distinguished from the seedless melons to avoid confusion during harvesting. In this variety trial, for example, the standard fruit were oblong and weighed an average of 20 pounds while the seedless melons were round with a mean weight of 14 pounds.

Seedless watermelon was found to produce yields similar to those of standard watermelon. Viewing average production on a per plant basis, the former produced 2.1 melons per vine with a weight of 14 pounds each whereas the latter produced 1.4 melons per vine with a weight of 20 pounds each. Thus, melon production for a seedless vine was 31.5 pounds and for a standard vine it was 28.4 pounds.

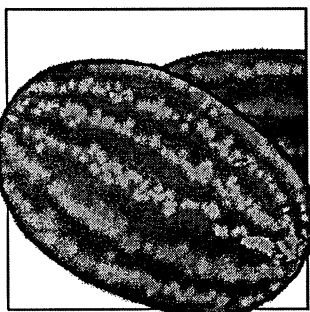
RESULTS OF SEEDLESS WATERMELON VARIETY TRIAL IN 1999¹

Variety	Transplant mortality	Marketable melons/vine	Fruit weight lbs	Sweetness Brix%	Flesh color
Millionaire	0a	2.3a	14.4a	9.4a	pink b
Crimson Trio	0a	2.2a	13.9ab	10.1a	red a
Tri-X Carousel	25a	2.1a	14.6a	10.2a	red a
RWM 8073	17a	2.6a	12.7bc	7.8a	pink b
Tri-X Shadow	25a	1.3a	12.4c	9.6a	pink/red ab

¹Mean separation within columns by Duncan's multiple range test at 5% level.

References

- Bevacqua, B. 1999. Watermelon production in SE Virginia. Va. Coop. Ext.
 Maynard, D.N. 1996. Growing seedless watermelon. Univ. Florida Coop. Ext..
 Maynard, D.N. 1997. Triploid watermelon cultigen evaluation, spring 1997. Univ. Florida rpt BRA-1997-15.
 Schultheis, J.R. 1997. Seedless watermelon varieties. North Carolina Coop. Ext. Serv.



Little Difference Found among Allsweet Watermelon

Eric Simonne, Edgar Vinson, Joe Little, Ron McDaniel, and Malcomb Pegues

This year's watermelon trials were conducted at the Gulf Coast Research and Extension Center (GCREC) in Fairhope and the Lower Coastal Plain Research Station (LCPRS) in Camden (Tables 1 and 2). Watermelon tests were also conducted at the Upper Coastal Plain Research Station (UCPRS) in Winfield and the North Alabama Horticultural Station (NAHS) in Cullman. However, these tests were lost due to excessive weeds and poor seed germination, respectively.

Watermelons at GCREC were direct seeded on bare ground in 60-foot long, five-foot wide plots with a hill spacing of approximately eight feet on April 5. At LCPRS, watermelons were direct seeded on bare ground in 40-foot long, five-foot wide plots with a hill spacing of five feet on May 20.

At GCREC, 30 pounds of N in the form of $\text{Ca}(\text{NO}_3)_2$ was preplant incorporated following soil test recommendations. Plants were trickle irrigated as needed throughout the growing season. Preemergence herbicide used was Poast (at a rate of two pints per acre) on June 18. Alleys were also hand-weeded as needed. An injection of 30 pounds of N per acre as $\text{Ca}(\text{NO}_3)_2$ was made at fruit set on June 9.

At LCPRS, one ton per acre of lime and 13-13-13 fertilizer at the rate of 300 pounds per acre were applied preplant. Ammonium nitrate (NH_4NO_3) was side dressed at a rate of 40 pounds of nitrogen (N) per acre. Plants were drip-irrigated on bare ground on May 21 and every four to five days throughout the growing season. To control weeds, watermelons were treated with Poast herbicide on June 14 at the rate of 1.5 pints per acre, hoed on June 19 to 21, and rototilled on June 21.

Watermelons were harvested on July 7 at GCREC and August 6 at LCPRS.

TABLE 1. RATINGS OF 1999 WATERMELON VARIETY TRIALS¹

Location	GCREC	LCPRS
Weather	5	5
Fertility	5	5
Irrigation	5	5
Pests	5	5
Overall	5	5

¹See introduction for a description of rating scales.

Important characteristics for watermelons are marketable yield, sweetness, and rind thickness. Fruits were graded as described in the *Watermelon Grader's Guide* (Circular ANR-681 from the Alabama Cooperative Extension System) and marketable yield was determined. Two representative melons were selected from each plot for the measure of soluble solids levels, which is often used to evaluate sweetness (Table 3). Watermelons with soluble solid levels of less than 10° Brix do not taste sweet. Rind thickness is used as an indicator of shipping ability and resistance to bruising and to splitting during handling. Rind thickness ranged from 0.5 to 0.75 inch.

Yields were high at both locations. Few differences were found among the Allsweet varieties. At GCREC 'Ferrari' and 'AU-AS-BC' were the lowest yielders while at the lowest yielder at LCPRS was 'AU-AS-BC'. Top yielding varieties were 'Big Stripe' at GCREC. 'Royal Sweet', 'Carnival', and the yellow-fleshed 'Summer Gold' were the top yielding varieties at LCPRS. 'Stars'N Stripes' and the standard 'Starbrite' were the highest yielding Jubilee varieties.

TABLE 2. SEED SOURCE, FRUIT CHARACTERISTICS, AND RELATIVE EARLINESS OF SELECTED WATER-MELON VARIETIES

Variety	Type ¹	Seed source	Fruit shape	Flesh color	Days to harvest	Disease claims ²	Years eval.
Arriba!	JU, F1	Hollar	Oblong	Red	82	ANT,FW	97-99
AU-AS-BC	AS, OP	Auburn Univ.	Oblong	Red	—	—	94, 96,97,99
Big Stripe	AS, F1	Willhite	Oblong	Red	85	FW	99
Carnival	AS, F1	Novartis	Blocky	Red	86	ANT,FW	97-99
Ferrari	AS, F1	Shamrock	Elongated	Red	—	—	97-99
Festival	IB, F1	Johnny's	Round	Red	75	—	99
Fiesta	AS, F1	Novartis	Elongated	Red	85	—	97-99
Jubilee II	JU, OP	Asgrow	Elongated	Red	90	*ANT, *FW	94,97-99
Mardi Gras	AS, F1	Novartis	Elongated	Red	86	ANT,FW	97,98,99
Pinata	AS, F1	Willhite	Elongated	Red	85	—	99
Royal Flush	AS, F1	Petoseed	Elongated	Red	92	—	98,99
Royal Sweet	AS, F1	Petoseed	Elongated	Red	85	ANT,FW	94,96,97-99
RWM-8036	AS, F1	Novartis	Blocky	Red	88	—	98,99
RWM-8052	AS, F1	Novartis	Blocky	Red	88	—	98,99
Sangria	AS, F1	Novartis	Elongated	Red	87	ANT,FW	99
Stars'N Stripes	AS, F1	Asgrow	Elongated	Red	85	*ANT, *FW	97-99
Starbrite	JU, F1	Asgrow	Oblong	Red	85	FW	97-99
Stargazer	AS, F1	Asgrow	Elongated	Red	85	*ANT, *FW	98,99
Summer Gold	AS, F1	Willhite	Blocky	Yellow	85	FW	99
Vista	JU, F1	Hollar	Oblong	Red	85	*ANT, *FW	98,99

*Race 1 only.

— = not available from seed catalogues .

¹ Type: F1 = Hybrid, OP = Open Pollinated; AS = Allsweet; CS = Crimson Sweet; IB = Icebox; JU = Jubilee.

² Disease Claims: ANT = Anthracnose; FW = Fusarium Wilt.

TABLE 3. 1999 DIPLOID WATERMELON VARIETY TRIAL

Variety	Type	Marketable yield lbs/a	Marketable fruits #/a	Individual fruit wt. lb	Soluble solids °Brix	Hollow heart in
Gulf Coast Research and Extension Center						
Big Stripe	AS	52,762	2,590	20	10.9	3
Mardi Gras	AS	43,161	2,276	19	10.8	0
RWM-8036	AS	42,920	2,109	20	11.4	4
RWM-8052	AS	40,663	2,072	20	9.9	2
Fiesta	AS	39,553	2,516	16	10.8	1
Royal Flush	AS	35,391	2,276	16	12.0	2
Stargazer	AS	35,224	2,072	17	11.9	3
Pinata	AS	34,595	2,017	17	10.9	4
Sangria	AS	33,985	2,054	17	11.8	1
Summer Gold	AS	30,470	1,721	18	10.9	1
Ferrari	AS	28,453	1,758	17	11.1	0
AU-AS-BC	AS	12,488	870	14	9.7	2
<i>R</i> ²		0.65	2.6		0.29	0.26
<i>CV</i>		22	10.6		11	14
<i>lsd</i>		22,500	2.68		3.94	2
Lower Coastal Plain Research Station						
Royal Sweet	AS	56,185	2,757	20	10.4	4
Summer Gold	AS	56,055	2,720	21	11.6	0
Carnival	AS	55,926	2,794	20	10.4	0
Fiesta	AS	47,601	2,905	16	10.2	0
Stargazer	AS	45,436	2,424	19	11.2	13
AU-AS-BC	AS	11,341	740	16	10.4	0
Stars' N Stripes	JU	76,479	3,460	22	10.5	0
Starbrite	JU	58,941	2,683	22	9.7	3
Jubilee II	JU	51,412	2,183	24	10.3	0
Arriba!	JU	50,524	2,553	20	10.1	0
Vista	JU	49,599	2,424	20	10.4	0
Festival	IB	13,709	1,351	10	9.6	0
<i>R</i> ²		0.71				
<i>CV</i>		27				
<i>lsd</i>		24,900				

Seed Sources

Abbott and Cobb, Inc.

To order: (800)-345-SEED
 In TX: (800) 227-8177
 Tech Rep: Pete Suddarth
 4517 Tillman Bluff Rd.
 Valdosta, GA 31602
 Ph: (912) 249-8135

Asgrow Seed Co.

To order: (800) 234-1056
 Tech. Rep: Duaine E. Kief
 412 Holly Hill Ct.
 Tallahassee, FL 32312
 Ph: (805) 570-1791
 E-mail: duaine.kief@svseed.com

Tech Rep: Rusty Autry
 2221 North Park Ave.
 Tifton, GA 31796
 Ph: (912) 392-0255

Seed Distribution Center
 Tech. Rep: Van Lindsey
 Ph: (912) 382-1815

Ferry-Morse Seed Co.

To order: (608) 837-6574
 Tech Rep: Glenn McKay
 P.O. Box 392
 Sun Prairie, WI 53590
 Ph: (608) 837-6574

Harris Seeds

To order: (800) 544-7938
 Tech Rep: Mark Willis
 P.O. Box 22960
 60 Saginow Dr.
 Rochester, NY 14692-2960
 Ph: (716) 442-0410
 Fax: (716) 442-9386

Tech Rep: John Kemery
 615 Weston Ridge Dr.
 Walland, TN 37886-2010
 Ph: (423) 681-3509
 Fax: (423) 983-7034
 E-mail: jkemery998@aol.com

Harry Moran Seed Co.

To order: (209) 579-7333
 Tech. Rep: Laura Isaac
 P. O. Box 4938
 Modesto, CA 95352
 Ph: (209) 579-7333
 Fax: (209) 527-8674

Hollar Seeds

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

Johnny's Select Seeds

To order: (207) 437-4395
 Tech. Rep: Steve Woodward
 1 Foss Hill Road
 RR1 Box 2580
 Albion, ME 04910-9731
 Fax: (800) 437-4290

Kelly Seed Company

To order: (800) 654-0726
 Tech. Rep: Jack Stuckey
 100 Shilo Rd
 P.O. Box 370
 Hartford, AL 36344
 Fax: (334) 588-6144

Liberty Seed Co.

To order: (800) 541-6022
 New Philadelphia, OH 44663-0806
 Ph: (330) 364-1611
 Fax: (330) 364-6415

Petoseed

To order: (850) 894-8026
 Tech. Rep: Cameron Sutherland
 6604 Tomy Lee
 Tallahassee, FL 32308-1643
 Ph: (850) 894-8026
 Fax: (850) 894-8036

Rupp Seeds

To order: (800) 700-1199
 Tech. Rep: Roger Rupp
 17919 County Road B
 Wansiom, OH 43567
 Ph: (419) 337-1841
 Fax: (419) 337-5491

Sakata Seed America, Inc.

To order: (914) 369-0032
 Tech. Rep: Atlee Burpee
 P.O. Box 1103
 Lehigh, FL 33970-1103
 Ph: (941) 369-0032
 Fax: (941) 369-7528

Seed Sources, continued

Sandoz Rogers/Novartis

To order: (912) 560-1863
Tech. Rep: Curt Pollard
Ph: (912) 560-1863, (912) 244-2922
E-mail: curt.pollar@seeds.novartis.com

Seedway

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

Seneca Hybrids

P.O. Box 128
Hall, NY 14463
Ph: (716) 526-6398
Fax: (716) 526-5988

Shamrock Seed Co., Inc

To order: (408) 351-4443
Tech Rep: Estella Barajas, Jim Davis
3 Harris Place
Salinas, CA 93901
Ph: (800) 351-4443
Fax: (408) 771-1517

Stokes Seeds Inc.

To order: (800) 263-7133
Tech. Rep: Joe Butwin
P.O. Box 548
Buffalo, NY 14240-0548
Fax: (905) 684-8499

Willhite

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

AU Vegetable Varieties Online

<http://www.ag.auburn.edu/dept/hf/faculty/esimonne>

Auburn University
Department of Horticulture
Variety Trials Home Page

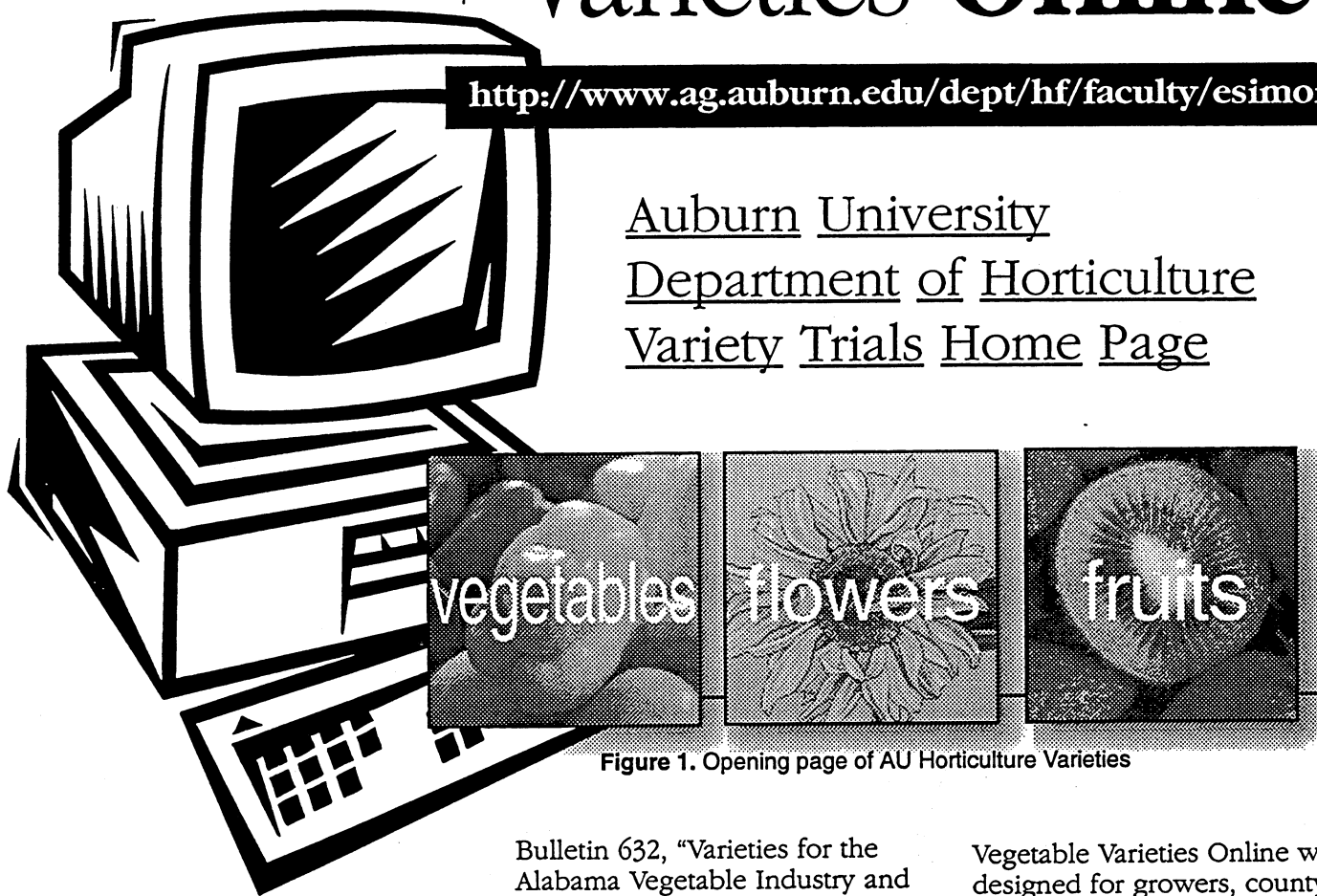


Figure 1. Opening page of AU Horticulture Varieties

The choice of a good variety affects the entire production of vegetables, fruits, and ornamentals, from seeding in the field to retail sale. To help growers and horticulture professionals select the best-performing varieties, the Department of Horticulture at Auburn University conducts annual variety trials throughout the state of Alabama. Field performance results and variety ratings are available from several Extension and experiment station publications: AAES

Bulletin 632, "Varieties for the Alabama Vegetable Industry and the Southeast"; ANR-1099, "Pumpkin and Winter Squash Varieties for Alabama"; ANR-1141, "Pepper Varieties for Alabama"; ANR-1143, "Tomato Varieties for Commercial Production"; ANR-1152, "Watermelon Varieties for Commercial Production"; and ANR-1159, "Commercial Varieties of Small Melons."

Because of the timeliness of variety information, the AU Vegetable Varieties Online Web page was established to present the latest variety information and to provide a searchable database on vegetable varieties. AU

Vegetable Varieties Online was designed for growers, county Extension agents, seed company personnel, researchers, and others interested in vegetable variety performance. While the information provided in the Web page is designed to be self-explanatory, this publication is intended to help users find the page on the Web and to help present the main features available on the vegetable section of the page. These include (1) retrieving research-based information on best-performing vegetable varieties, (2) finding seed sources and contacts from seed companies, and (3) accessing links to other relevant variety information.

Accessing the Page on the Internet

AU Vegetable Varieties Online can be found at <http://www.ag.auburn.edu/dept/hf/faculty/esimonne>. A link to "AU Variety Trials" on the AU Horticulture Home Page also exists at <http://www.ag.auburn.edu/hf>.

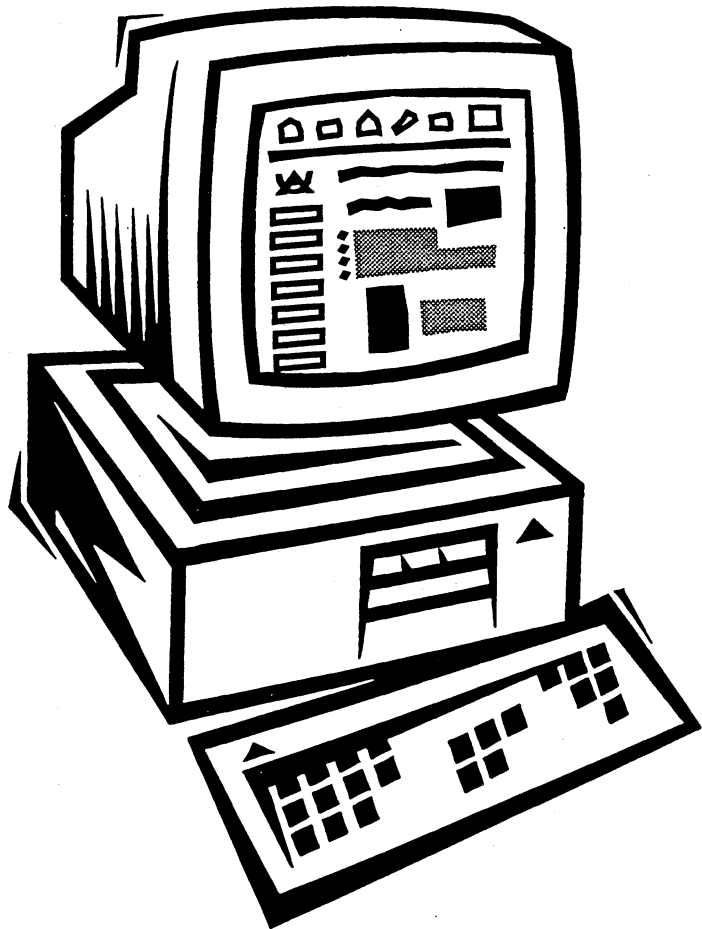
Three categories for variety information are available on the opening page—vegetables, flowers, and fruits (Figure 1). Clicking on a picture leads to each variety welcome page. The AU Vegetable Varieties Online page is found by clicking on the vegetable picture.

A few links and the disclaimer are also on the opening page.

Description of AU Vegetable Varieties Online

The welcome page of AU Vegetable Varieties Online is divided into two sections. On the left is the Table of Contents in a toolbar outline and on the right side is the actual opening of the page (Figure 2).

Choices on the opening welcome page of AU Vegetable Varieties Online are the following:



1 Explanation of Rating System and Database: helps conduct a vegetable variety search and provides a description of how the database works.

2 List of Vegetable Crops: lists all the vegetable crops in the database. Select a vegetable crop and click on the name or picture. Links to specific Extension vegetable publications are also at the bottom of this page.

3 Description of Variety Types of Crops: explains the information about the different variety types of the crops by showing pictures or giving detailed descriptions. This page can also be accessed during a search.

4 Contacting Seed Companies and Web Sites: lists sales and technical representatives (phone numbers and addresses) and Web pages of seed companies participating in Auburn University's vegetable variety trials.

5 Vegetable Variety Trial Team Members: features pictures of the vegetable variety trial team members and their responsibilities.

For additional information about vegetable variety production, follow the link to **Horticulture Extension Publications** for information on vegetable varieties, production, harvest, and disease control.



Figure 2. Opening page of AU Vegetable Varieties Online

Database and Searches

The database gives each vegetable crop tested by Auburn University a rating and allows a search for varieties. Each crop has a separate Web page found from the "List of Vegetable Crops" page. Five options are available to search when you click on a vegetable crop:

- **"Rating."** This category allows a search for the varieties rated by Auburn University. A drop down menu appears showing the different ratings. Varieties are rated on a 0 to 4 star scale (Table 1). Clicking the "equal to or higher" check box next to the rating search category can do a search for more than one rating. The rating

system for the vegetable varieties combines the yield potential, the claimed disease resistance/tolerance, and the horticultural type, as well as other relevant observations.

Table 1. Rating System for Vegetable Varieties Rating Group Description

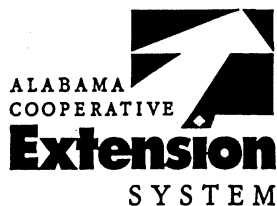
****	Superior Variety
***	Outstanding Variety
**	Good Performing Variety
*	Adapted Variety
Unsuitable	Not suited for commercial production
Not rated	Not evaluated by Auburn University

A single rating is available for each crop throughout the state. However, different tomato ratings are available for South and North Alabama. The first set of stars indicates variety tests in North Alabama, and the second set after the slash indicates variety tests in South Alabama.

- **“Variety Name.”** This gives a complete list of all the variety names of the crop available in the database. If the specific name of the variety is known, a search can display this choice as a result. Otherwise, it may be more beneficial to leave this category as “All.”
- **“Variety Type.”** This feature helps narrow the search by selecting the variety type. Where applicable a description of variety types is on a separate page with details and pictures. This information can be accessed through a link named “More Information” next to the “Variety Type” search option. To exit this additional information, the new browser first must be closed.

- **“Seed Company.”** Each variety has at least one specific seed source. A search can be conducted if a specific seed company is desired. The seed companies can be contacted on the “Seed Company” page that contains a reference list and links to their Web sites.
- **“Sort By.”** This feature enables alphabetization of the results by the categories. For example, if a search posts results alphabetized by the “Variety Name,” this option would be selected on the “Sort By” feature instead of by “Rating,” which is the default setting. The “Descending” check box feature next to the “Sort By” category displays the highest ratings first.
- **“View the Entire Database.”** The option of looking at all of the varieties in the database can be chosen by leaving the search choice as “All” for every category. The varieties that do not have a rating have not been evaluated in the AU trials, but have been included for reference.
- **“Display of Search Results.”** When the search parameters have been selected, the search of the database will display information and results after pressing the “Search the Database” button.

The Web page is primarily intended to be a reference guide to growers and horticulture professionals in Alabama. Variety performances presented are based on small-scale research plots. Test results may vary from location to location. It is always recommended to perform an on-farm trial of several varieties before making a large planting of a single variety. For further information, contact your county Extension office or e-mail kdane@acesag.auburn.edu.



ANR-1166

Eric H. Simonne, *Extension Horticulturist*, Assistant Professor, and **Karen Y. Dane**, *Research Assistant and Webmaster*, both in Horticulture, Auburn University

For more information, call your county Extension office. Look in your telephone directory under your county's name to find the number.

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ECP, 1M, New Oct 1999, ANR-1166

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 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 publication process for the next regional bulletin (fall 1999).

When: March 29, 2000

Deadline for fall 1999 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:

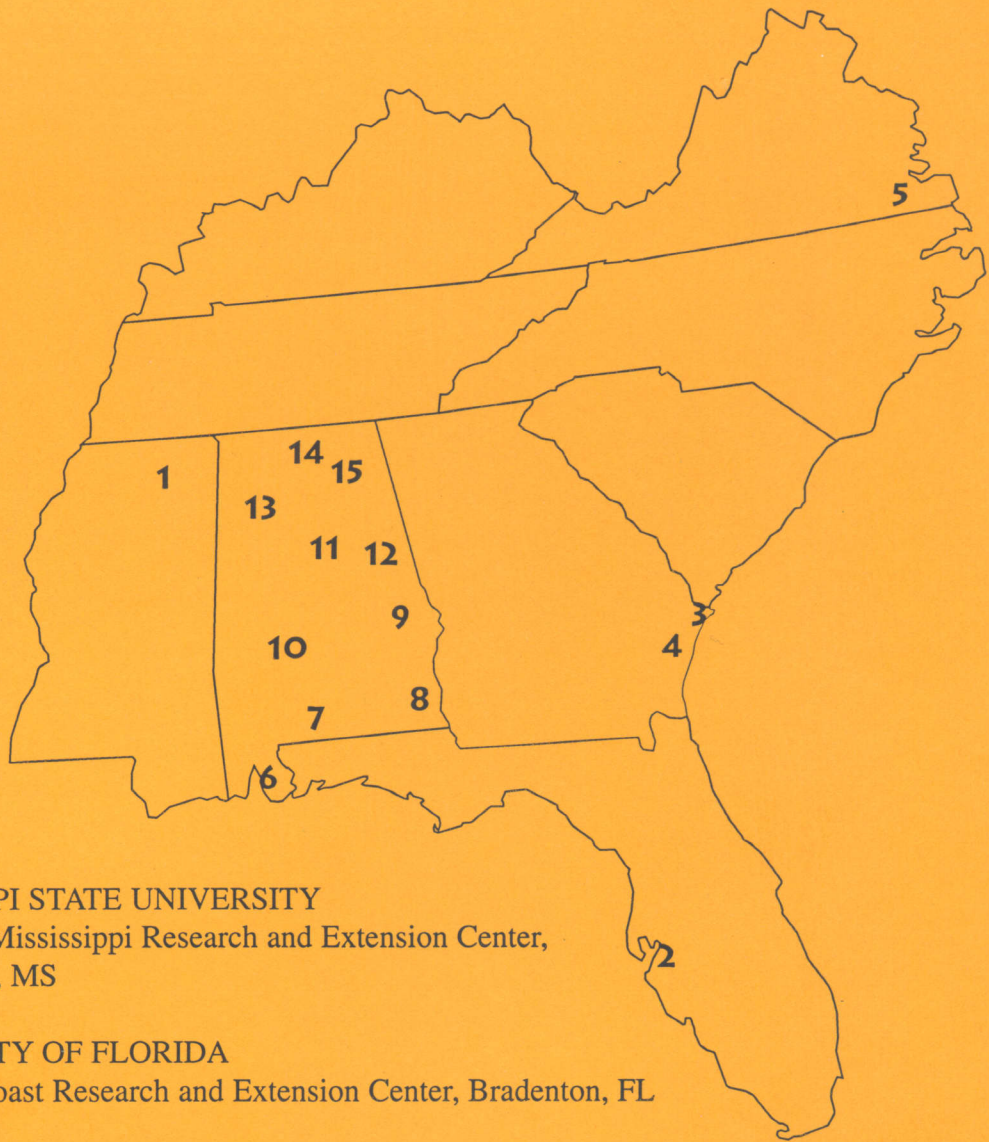
- Follow the format used in the first three regional bulletins.
- Include author's complete mailing address, e-mail address, and phone number.
- Follow your own unit's internal review process. Contributions will be edited, but not formally reviewed.

How: Send a disk and hard copy to:

Edgar Vinson or Eric Simonne
Department of Horticulture
101 Funchess Hall
Auburn University, AL 36849-5408

Or send e-mail to:

evinson@acesag.auburn.edu, or
esimonne@acesag.auburn.edu



MISSISSIPPI STATE UNIVERSITY

- 1 North Mississippi Research and Extension Center, Verona, MS

UNIVERSITY OF FLORIDA

- 2 Gulf Coast Research and Extension Center, Bradenton, FL

UNIVERSITY OF GEORGIA

- 3 Bamboo Farm and Coastal Gardens, Savannah, GA
- 4 Vidalia Onion and Vegetable Research Farm, Reidsville, GA

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

- 5 Southampton County Office, Virginia Cooperative Extension, Courtland, VA

AUBURN UNIVERSITY AND ALABAMA A&M UNIVERSITY

- 6 Gulf Coast Research and Extension Center, Fairhope, AL
- 7 Brewton Experiment Field, Brewton, AL
- 8 Wiregrass Research and Extension Center, Headland, AL
- 9 E.V. Smith Research Center, Shorter, AL
- 10 Lower Coast Plain Research Station, Camden, AL
- 11 Chilton Area Horticulture Station, Clanton, AL
- 12 Piedmont Research Station, Camp Hill, AL
- 13 Upper Coastal Plain Research Station, Winfield, AL
- 14 North Alabama Horticulture Station, Cullman, AL
- 15 Sand Mountain Research and Extension Center, Crossville, AL