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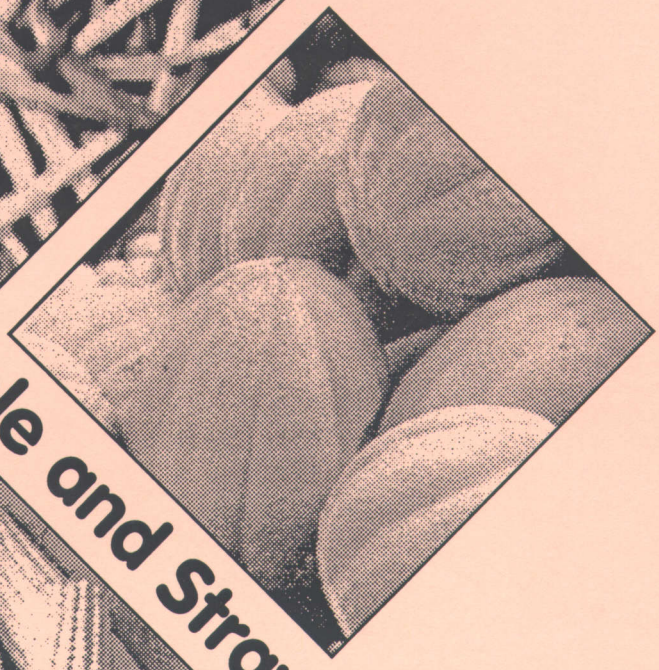
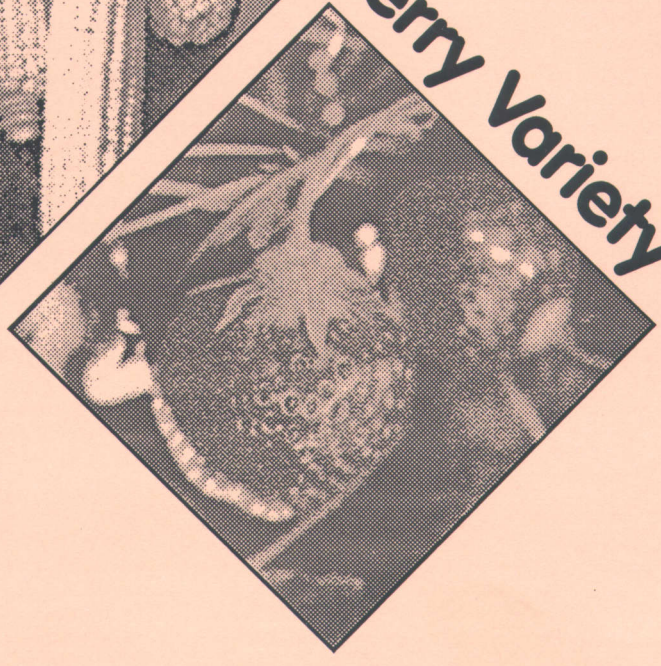
Commercial Vegetable and Strawberry Variety Trials





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Contents

Introduction: Vegetable Variety Trials Across State Lines

Eric Simonne

Producing quality vegetables starts with the choice of a good variety. Hence, vegetable variety trials are part of the support successful vegetable production needs.

Variety performance does not follow state lines. However, performance is somewhat influenced by geographical conditions, weather conditions, soil types, and cultural practices. As a response to the many encouragements to develop Southeastern Regional variety trials, this variety trial report presents field results from Alabama (Auburn University, AU), Georgia (The University of Georgia, UGA), and Mississippi (Mississippi State University, MSU).

Even at the regional level, the timeliness of the information contained in reports such like this critical. The main audience of these reports (in fact, our clientele) is comprised of members of the seed industry, researchers, Extension specialists and county agents, horticulturists, and growers. All of them need the information before the next growing season, so that the performance of experimentals and updates on best-performing varieties can be used to determine seed orders. Such essential timeliness is due largely to the researchers who are dedicated to excellence in vegetable variety trials. All should be thanked for their contributions.

Crops included in this Spring 1998 Regional Bulletin are slicer cucumber (AU, MSU), okra (AU), sweet corn (MSU, AU), watermelon (UGA, AU), tomato (AU), strawberry (MS), bell pepper (AU), yellow and zucchini summer squash (MS, AU), cantaloupe and honeydew (AU), green bean (AU), and lettuce (AU). Production systems included bare-ground planting and plasticulture, combined with overhead or drip irrigation. This report presents in-depth information on the yield and performance of these crops. However, glancing rapidly at the yield results may not provide all the information necessary for choosing the best variety. Here are a few tips for getting the most out of these vegetable variety trial results.

Fertilization, Insect, and Pest Control. Trials 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 represent 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 98IPM-2 from the Alabama Cooperative Extension System).

Statistical Analyses. The coefficient of determination (R^2), coefficient of variation (CV), and least significant 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. In this report, R^2 relates to the relative importance of cultivar, and does not include the effect of replication. R^2 is calculated as $SS_{variety}/SS_{total}$. (SS is the sum of squares.) CV is an expression of yield variability relative to yield mean. Low CVs (under 20%) are desirable but are not always achieved.

There must be a minimum yield difference between two varieties before one can statistically conclude that one variety actually performs better than another. This is known as the least significant difference (lsd). When the difference in yield between two varieties is less than the lsd value, one cannot conclude that there is any real difference between two varieties. For example, in the 1998 slicer cucumber at the North Mississippi Research and Extension Center, 'Thunder' early yield was 6,840 pounds per acre, while that of 'Dasher II' and 'Pointsett 76' were 6,670 and 2,200 pounds per acre, respectively. Since there was less than a 2,150 difference (the lsd) between 'Thunder' and 'Dasher II', there is no statistical difference between the early yields of these two varieties. The observed differences are mainly due to random errors. However, the difference between 'Thunder' and 'Pointsett 76'

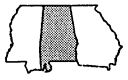
was 4,640 (a difference larger than the lsd value), indicating that there is a real difference between the yields of these two varieties. From a practical point of view, readers of VT trial results should compare varieties in terms of lsd.

The total yield of each variety is compared to the yield of the best performing variety within each test and each type. In the tables that present yield data, a line across the page groups the varieties within one lsd from the best performing (top) variety.

Using Variety Trial Information for Selection of a Variety. Variety performance 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 potential for high yields and quality, under the rating conditions described in Table 1. Also, vegetable varieties come and go, and good-performing varieties may not be available consistently. Therefore, it is important 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.

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



'Indy' and 'Speedway' Out-Perform 'General Lee' in Slicer Cucumber Trial

Eric Simonne, Edgar Vinson, Arnold Caylor, Ronald McDaniel, and Malcomb Pegues

Slicer cucumber variety trials were conducted at the Gulf Coast Substation (GCS) in Fairhope and the North Alabama Horticulture Substation (NAHS) in Cullman (Tables 1 and 2).

Selected varieties were direct-seeded on bare ground at a depth of one inch on April 10 at GCS and May 10 at NAHS. At both locations, plots consisted of a single 20-foot row. Within-row spacing was eight inches, which provided a stand of approximately 17,000 plants per acre.

At GCS, fertilization consisted of a preplant application (per acre) of a 10-10-10 fertilizer at a rate of 500 pounds and a sidedress application of ammonium nitrate (NH_4NO_3) at a rate of 255 pounds. Pre-emergence herbicide was Curbit broadcast-applied on April 10 at a rate of four pints per acre. Ridomil/Bravo fungicide was applied at a rate of two pounds per acre on May 27, June 5, and June 12. Bravo 720 fungicide was also applied on June 18 at a rate of three pints per acre.

At NAHS, heavy rains shortly after plant emergence destroyed the test.

Cucumbers were harvested eight times between June 3 and June 19 at GCS. After each harvest, fruits were weighed and graded according to the *Cucumber Grader's Guide* (Circular ANR-771 from the Alabama Cooperative Extension System). Early (Table 3) and total (Table 4) yields were determined. Earliness was evaluated by adding the marketable yields of the first four harvests.

Table 1. Ratings of 1998 Cucumber Variety Trials[1]

Location	GCS	NAHS
Weather	4	1
Fertility	5	5
Irrigation	5	5
Pests	5	5
Overall	5	1

[1]See introduction for a description of rating scales.

Because of past performance in trials, 'General Lee' was the reference variety for this test. Differences in total marketable yield among all varieties were not significant, while 'General Lee FM' and 'Meteor' had significantly lower early marketable yield. This reflects the fact that several comparable slicer cucumber varieties are available. Numerically, 'Indy' and 'Speedway' had the highest total and early marketable yield.

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

Variety	Type[1]	Seed source	Days to harvest	Disease tolerance/resistance[2]	Years evaluated
Dasher II	F1	Petoseed	58	ALS,ANT,CMV,DMPM,Sc	94-98
General Lee	F1	Ferry-Morse	65	CMV,DM,PM,Sc	97-98
Indy	F1	Petoseed	59	ALS,ANT,CMV,PM,PRSV,STM,ZYMV	96-98
Jazzer	F1	Stokes	48	CMV,DM,PM,Sc	96-98
Lightning	F1	Asgrow	57	ALS,CMV,DM,PM,Sc	94-98
Meteor	F1	Asgrow	50	ALS,ANT,CMV,DM,PM,Sc	94-98
Speedway	F1	Petoseed	56	ALS,ANT,CMV,DM,PM,Sc	94-98
Thunder	F1	Asgrow	56	ALS,CMV,DM,PM,Sc	94-98
Turbo	F1	Petoseed	65	ALS,ANT,CMV,DM,PM,Sc,STM	94,96-98

[1]Type: F1 = Hybrid

[2]Disease tolerance/resistance: ANT = Anthracnose; ALS = Angular Leaf Spot; CMV = Cucumber Mosaic Virus; DM = Downy Mildew; PM = Powdery Mildew; PRSV = Papaya Ring Spot Virus; Sc = Scab; STM = Stemphylium; ZYMV = Zucchini Yellow Mosaic Virus

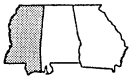
TABLE 3. EARLY PRODUCTION AND GRADE DISTRIBUTION OF SELECTED CUCUMBER VARIETIES GROWN AT THE GULF COAST SUBSTATION

Variety	Percent stand	Early marketable wt. lbs/a	Early fancy wt. lbs/a	Early fancy no. #/a	Early US#1 wt. lbs/a	Early US#1 no. #/a	Early US#2 wt. lbs/a
Indy	99	11,411	5,803	10,579	5,608	12,757	1,315
Speedway	99	10,136	4,084	7,779	6,052	15,713	988
Lightning	98	9,054	3,337	7,001	5,717	14,468	1,369
Dasher II	100	8,339	3,182	7,312	5,157	14,157	941
Thunder	98	8,028	3,368	7,468	4,659	12,757	863
Turbo	97	7,864	3,485	7,934	4,379	11,201	366
Jazzer	85	7,613	2,811	5,601	4,802	9,542	622
General Lee FM	89	7,032	3,687	8,401	3,345	9,023	482
Meteor	100	6,309	2,808	6,534	3,500	10,579	459
R^2	***0.30***	***0.26***					
CV	***10***	***35***					
lsd	***14***	***4,169***					

TABLE 4. TOTAL PERFORMANCE AND GRADE DISTRIBUTION OF SELECTED CUCUMBER VARIETIES GROWN AT THE GULF COAST SUBSTATION

Variety	Total percent stand	Total marketable wt. lbs/a	Total fancy wt. lbs/a	Total fancy no. #/a	Total US#1 wt. lbs/a	Total US#1 wt.. #/a	Total US#2 wt. lbs/a	Cull lbs/a	Individual fruit wt.[1] lb
Indy	99	30,975	12,220	22,247	18,755	40,294	5,064	2,092	0.50
Speedway	99	27,521	9,708	18,202	17,813	40,138	2,948	2,178	0.48
Turbo	97	24,371	8,774	18,047	15,596	34,382	1,649	1,058	0.45
Dasher II	100	22,613	8,580	17,891	14,033	34,382	2,186	801	0.44
General Lee FM	89	22,426	9,941	21,314	12,485	31,426	2,209	1,245	0.43
Thunder	98	21,959	7,631	15,869	14,328	35,316	2,575	1,680	0.44
Meteor	100	20,481	6,970	14,468	13,512	34,538	1,937	1,369	0.43
Jazzer	85	19,374	6,099	10,994	13,276	25,722	1,379	1,649	0.54
Lightning	98	18,700	6,200	12,602	12,500	30,026	2,676	1,976	0.44
R^2	***0.30***	***0.23***							***0.43***
CV	***10***	***35***							***10***
lsd	***14***	***12,212***							***0.07***

[1]Fancy grade



North Mississippi Slicing Cucumber Trials

Kent Cushman and Thomas Horgan

This study was located at the North Mississippi Research and Extension Center in Verona, Mississippi, on a Quitman silt loam soil. Nine cultivars of slicing cucumbers were planted in a randomized complete block design with three replications.

Plant beds were formed six inches high and 30 inches across the top with a press-pan-type bed shaper. Methyl bromide fumigant was applied during bed formation at the rate of 350 pounds per acre. Preplant fertilizer was banded in both sides of the plant bed at the rate of six pounds of 9-13-24 (N-P_2O_5-K_2O) per 100 feet of row. White-on-black plastic mulch, white side up, and drip irrigation tubing were installed immediately after bed formation. Seeds were planted through the plastic on June 15 by hand. Plants were spaced 12 inches apart in plots 20 feet long and 13 feet wide, but only the center ten feet of each plot was harvested. A total of 270 plants were used in this study (ten plants x nine cultivars x three replications).

Asana XL or Thiodan EC were mixed with Bravo WS and sprayed on a seven- to 10-day schedule with an air-blast sprayer for insect and disease control. Water or fertilizer solution was applied through the drip tape on an as-needed basis. Fertilizer was applied by injecting a concentrated fertilizer solution (13.3 ounces of a high-grade soluble 20-20-20 fertilizer per gallon of water) at a 1:200 ratio to achieve a final N concentration of 100 ppm in the irrigation water.

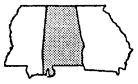
Harvest began July 22 and ended August 10 for a total of nine harvests. We harvested at two- or three-day intervals. Cucumbers from each plot were separated into categories of marketable or cull and then counted and weighed (Table 1).

Yields may appear low due to the wide spacing between rows. Total yields ranged from a low of 11,770 pounds per acre for 'SRQ 3775' to a high of 17,680 pounds per acre for 'Thunder'. However, total yields were not significantly different for any of the nine entries. Early yields were greater for 'Panther', 'Thunder', and 'Dasher II' than for 'Poinsett 76' and 'SRQ 3775'. Entries with greater total yield were earlier than entries with lower total yield.

TABLE 1. SEED SOURCE AND MARKETABLE YIELD OF SELECTED SLICER CUCUMBER AT THE NORTH MISSISSIPPI RESEARCH AND EXTENSION CENTER

Variety	Seed source	Total yield[1]			Early yield[2]
		Total lbs/a	Marketable[3] %	Average weight[4] oz	Total lbs/a
Thunder	Asgrow	17,680	75	10.1	6,840
Dasher II	Petoseed	16,310	76	9.9	6,670
General Lee	Abbott & Cobb	15,820	76	9.9	5,550
ACX-1811	Abbott & Cobb	15,660	72	10.9	4,570
ACX-5001	Abbott & Cobb	15,080	81	10.2	4,870
Panther	Sunseeds	14,870	69	9.5	6,910
Green Sleeves	Harris Seeds	14,080	71	9.4	5,630
Poinsett 76	Wax	12,120	83	9.9	2,200
SRQ-3775	Sunseeds	11,770	62	10.5	3,100
R^2			***0.78***		***0.74***
CV			***6***		***24***
lsd			***8***		***2,150***

[1]Total yield of nine harvests. [2]Yield of first four harvests. [3]Relative number of marketable fruit as the percentage of total number harvested (marketable plus culls). [4]Average fruit weight of nine harvests.



'Spike', 'Clemson Spineless', and 'Annie Oakley II' Best Performers in Okra Trial

Eric Simonne, Edgar Vinson, and Arnold Caylor

An okra variety trial was conducted at the North Alabama Horticulture Substation (NAHS) in Cullman (Tables 1 and 2). On May 4, 1998, selected varieties were direct seeded on plastic-mulched, drip irrigated raised beds on 20-foot-long plots. Within-row spacing was 3 feet.

Fertilization consisted (per acre) of a preplant application of 230 pounds of ammonium nitrate on April 24 and one sidedress application of ammonium nitrate on May 29 at a rate of 115 pounds. This provided a total of 135 pounds of nitrogen per acre. No insecticide or herbicide was used.

Okra was harvested as needed 14 times between June 4 and June 30. Early yield was calculated by adding the yield of the first four harvests (Table 3).

Varieties differed in their growth habit. The industry standard 'Clemson Spineless' (from all sources) showed a 'V' growth habit, which made the pods easy to access and to harvest. Plants of 'Spike' showed limited branching, which gave them a straight-up aspect. 'Emerald', 'White Velvet', and 'Annie Oakley II' were tall and bushy, while 'Babby Bubba' was bushy and compact. This growth habit makes 'Babby Bubba' more suitable for home gardens, where space may be limited. The pods of 'Burgundy' were the hardest to snap off the plant. Those of 'White Velvet' were round in diameter, and not polygonal like typical okra pods.

Table 1. Ratings of 1998 Okra Variety Trial[1]

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

[1]See introduction for a description of rating scales.

Overall, yields were high because plastic mulch and drip irrigation were used. 'Spike', 'Cajun Delight', and 'Annie Oakley II' had significantly higher early marketable yield, while these three varieties along with 'Clemson Spineless' from Asgrow and Kelly had significantly higher total marketable yield. Significant differences were observed for 'Clemson Spineless' depending on the seed source. These results suggest 'Spike' as a suitable variety for early market, while 'Clemson Spineless' and 'Annie Oakley II' are main-season high yielders.

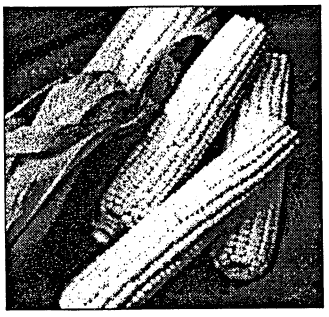
Table 2. Seed Source, Earliness, and Disease Claims of Selected Okra Varieties

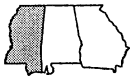
Variety	Type	Seed source	Days to harvest	Pod color	Disease claims	Years evaluated
Annie Oakley II	F1	Petoseed	48	Green	—	97,98
Baby Bubba	F1	Burpee	53	Green	—	98
Burgundi	OP	Johnny's	60	Red	—	97,98
Cajun Delight	F1	Johnny's	52	Green	—	97,98
Clemson Spineless	OP	Asgrow	55	Green	—	97,98
Clemson Spineless	OP	Petoseed	55	Green	—	97,98
Clemson Spineless	OP	Kelly	.	Green	—	98
Emerald	OP	Ferry-Morse	55	Green	—	97,98
Spike	OP	Wilhite	48	Green	—	98
White Velvet	.	Local Store	.	White	—	98

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

TABLE 3. EARLY AND TOTAL PRODUCTION AND GRADE DISTRIBUTION OF SELECTED OKRA VARIETIES GROWN AT THE NORTH ALABAMA HORTICULTURE SUBSTATION

Variety	Percent stand	Early marketable wt. lbs/a	Early pod no. #/a	Early fruit wt lb/pod	Total marketable wt. lbs/a	Total pod no. #/a	Total fruit wt. lb/pod
Annie Oakley II	98	389	8,401	0.044	4,437	141,418	0.031
Clemson Spineless (Asgrow)	95	12	156	0.080	3,843	117,148	0.033
Cajun Delight	93	390	11,357	0.034	3,448	126,171	0.027
Clemson Spineless (Kelly)	98	23	156	0.150	3,399	110,925	0.030
Spike	95	373	17,269	0.021	3,157	121,037	0.027
White Velvet	98	176	622	0.195	2,500	81,055	0.031
Emerald	88	48	1,711	0.035	2,413	99,412	0.024
Burgundi	95	101	2,800	0.037	2,301	62,541	0.037
Baby Bubba	93	67	1,867	0.025	2,270	51,651	0.048
Clemson Spineless (Petoseed)	100	0	0	.	1,308	46,050	0.028
R^2	***0.11***	***0.47***		***0.45***	***0.26***		***0.34***
CV	***11***	***116***		***121***	***40***		***32***
lsd	***ns***	***265***		***0.151***	***1,587***		***0.017***





North Mississippi Sugar-Enhanced Sweet Corn Trials

Kent Cushman and Thomas Horgan

This study was located at the North Mississippi Research and Extension Center in Verona, Mississippi, on a Quitman silt loam soil. Twelve cultivars of sugar-enhanced (se) sweet corn were planted in a randomized complete block design with three replications.

Preplant fertilizer was broadcast at the rate (per acre) of 40 pounds N, 83 pounds P_2O_5, and 120 pounds K_2O. Plots were planted on April 17 with a small garden planter. Plants were spaced about 12 inches apart in 20-foot long, eight-row wide plots, but only the center six rows were harvested for data collection. Rows were spaced 30 inches apart. Bladex 4L and Dual 8E preemergence herbicides, each at 1.4 quarts per acre, were applied immediately after planting. All plots were sidedressed with liquid 32-0-0 at the rate of 100 pounds N per acre on May 21; the solution was banded about five inches to the side of each row and about one to two inches deep.

Sevin WPS, Asana XL, or Thiodan EC were sprayed as needed with an air-blast sprayer for insect control. Furrow irrigation was applied during silking after several weeks of dry weather.

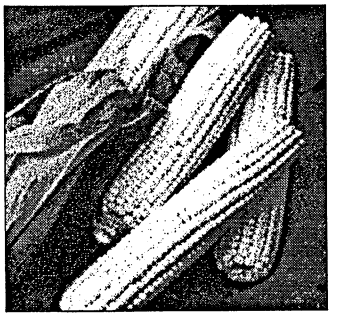
Harvest began June 20 and ended July 3 for a total of seven harvests. Corn ears from each plot were separated into categories of marketable or cull and then counted and weighed (Table 1).

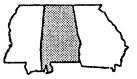
'Champ' was the earliest entry in this trial, beginning 64 days after planting, but its harvest extended over about a 10-day period. 'Sensation', 'Calico Bell', 'Silver King', 'Fantasia', and 'Brilliance' performed well and yielded within about a five-day period from approximately 67 to 72 days after planting. 'Kandy Plus' performed well and yielded over a surprisingly short two-day period from 72 to 74 days after planting. 'Dancer' began to yield late, at 75 days, and performed poorly.

Table 1. Sugar-enhanced (se) Sweet Corn Yield at the North Mississippi Research and Extension Center

Entry	Seed source	Color	Total lbs/a	Total doz/a	Marketable[1] %	Avg. ear wt. oz
Sensation	Seneca	W	9,800	1,920	99	6.8
Calico Bell	Asgrow	BC	9,740	1,770	100	7.3
Silver King	Novartis/Rogers	W	9,250	1,680	100	7.3
Fantasia	Asgrow	W	8,500	1,490	95	7.5
Champ	Asgrow	Y	8,440	1,650	97	6.8
Brillance	Harris	W	8,160	1,590	99	6.8
Kandy Plus	Novartis/Rogers	Y	7,800	1,250	98	8.3
Silver Princess	Novartis/Rogers	W	6,950	1,380	98	6.9
Kandy King	Novartis/Rogers	Y	6,630	1,300	98	6.8
Sir Prize	Harris	BC	6,440	1,200	98	7.3
Bodacious	Willhite	Y	6,410	1,290	95	6.6
Dancer	Seneca	BC	3,110	560	92	6.9
R^2			***0.66***	***0.67***		
CV			***23***	***22***		
lsd			***2,950***	***530***		

[1]Relative number of marketable ears as the percentage of total number harvested (marketable plus culls).





Several Sweet Corn Experimentals Look Competitive

Eric Simonne, Edgar Vinson, Robert Boozer, Ronald McDaniel, Malcomb Pegues, Jim Pitts, and Randall Rawls

Sugary (*su*), sugar-enhanced (*se*), and supersweet (sh_2) sweet corn varieties were evaluated at the Gulf Coast Substation (GCS) in Fairhope (*su/se*,sh_2), the Chilton Area Horticulture Substation (CAHS) in Clanton (*se*), and the Upper Coastal Plain Substation (UCPS) in Winfield (*se*) (Tables 1 and 2). The planting of the white sh_2 test could not be made at the desired time. The test will be conducted in 1999.

At all substations, cultural practices for *su*, *se* and sh_2 types were similar. However, within each location, sh_2 varieties were separated by 300 feet from other field and sweet corn plantings because cross pollination alters grain characteristics, including sweetness. At all locations, four-row plots 20-feet long and 8-feet wide were established. Within-row spacing was six to eight inches, creating a stand of approximately 32,000 plants per acre.

At GCS, fertilization consisted of preplant applications of 40-0-40 (at a rate of 266 pounds per acre) for sh_2 test and 4-12-12 (at a rate of 333 pounds per acre) for the *su/se* test. Both applications were made on April 2. The preplant herbicide Dual 8E was applied on April 4 at a rate of one quart per acre. The planting date was April 4. On May 20, 194 pounds per acre of 66-0-0 were applied to the *su/se* test and 120 pounds per acre of 40-0-0 were applied to the sh_2 test. On May 26, sh_2 and *su/se* tests received 117 pounds per acre of 40-0-0. Plots were over-head irrigated as needed to provide approximately 1.5 inches water per week.

Herbicides used were Dual II and Roundup (each at a rate of one quart per acre) applied on April 21 to the sh_2 test and on April 22 to the *su/se* test. Insect control was provided to both tests by applications of Lannate LV (at a rate of 1.5 pints per acre) on June 2; Asana XL (at a rate of six ounces per acre) on June 1, 9, 10, 11, and 14; and Ambush (at a rate of 6.5 ounces per acre) June 11, 12, and 16.

At CAHS, fertilization consisted of a preplant application (per acre) of 778 pounds of 13-13-13 on May 4, and a sidedress application of 50 pounds of N on June 12 as ammonium nitrate. The planting date was May 6. Weed control was provided by Dual and Aatrex (both at two pints per acre) on June 9. Overhead irrigation was used to supplement rainfall and provide a total of approximately one inch per week.

Table 1. Ratings of 1998 Sweet Corn Variety Trials[1]

Location	GCS	CAHS	UCPS
Weather	4	5	5
Fertility	5	5	5
Irrigation	5	5	5
Pests	4	4	4
Overall	5	5	5

[1]See introduction for a description of rating scales.

At UCPS, preplant fertilization provided (per acre) 60 pounds of N, 60 pounds of P_2O_5, and 75 pounds of K_2O. Preplant herbicide was Aatrex 4L at a rate of one quart per acre. Planting date was May 15. Approximately three weeks later, plants were sidedressed with 120 pounds of N per acre. The test was drip irrigated throughout the growing season. No sprays were used.

Su/se varieties were harvested on June 19, 24, and 30 at GCS and between June 30 and July 15 at UCPS. Sh_2 varieties were harvested on June 24 and 26 at GCS and on June 18 at CAHS. After harvest, ears were graded following the *Sweet Corn Grader's Guide* (Circular ANR-679 of the Alabama Cooperative Extension System). Yield (Table 3) and ear characteristics (Table 4) were determined. At CAHS, individual ear weight appeared to be lower than at other locations because the ears were shucked before being weighed.

In the yellow/se test at GCS, 'Empire' and 'GH-4881' significantly out-yielded the standard 'Merit' (*su*). These three varieties also had the highest quality index. In the yellow/sh_2 test at GCS, two experimental entries ('GSS-3577' and 'XPH-3084') had significantly higher yields than the reference 'Punchline'. These three varieties also had the highest quality index. The white/se test was repeated at two locations (CAHS and UCPS). The reference 'Fantasia' was the only variety to perform well in both tests, though qual-

ity index values were below expected values. The experimentals 'WH-4487' at CAHS and 'WHT-2972' at UCPS showed good yield potential and acceptable quality index values. Only three entries were evaluated in the bi-color/se test at CAHS and UCPS. The standard 'Sir Galahad' and the experimental 'BC-4585' had highest yields. Based on these results, recommendation or dispositions of experimentals were made (Table 5).

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

Variety	Seed source	Color	Type	Days to harvest	Disease resistance/tolerance[1]	Years evaluated
BC-4885	Novartis	BC	se	.	—	98
BC-7182	Novartis	BC	se	.	—	98
Challenger	Asgrow	Y	sh2	78	CS,NCLB,SBW,SCLB	94-98
Empire	Novartis	Y	se	.	—	98
Fantasia	Asgrow	W	se	82	CR,CS	95-98
Forever	Asgrow	Y	sh2	84	CR,NCLB,SBW,SCLB	94,96-98
GSS-1526	Novartis	Y	sh2	.	—	98
GSS-3577	Novartis	Y	sh2	.	—	98
GH-4881	Novartis	Y	se	.	—	98
Horizon	Stokes	Y	se	.	—	98
Legend	Harris Seeds	Y	se	73	CS,MDMV,NCLB,SBW	95-98
Merit	Asgrow	Y	su	78	CS,SBW,SCLB,MDMV, NCLB	96-98
Prime Plus	Novartis	Y	sh2	.	—	97,98
Prime Time	Novartis	Y	sh2	.	—	97,98
Punchline	Asgrow	Y	sh2	74	ANT,NCLS,SBW,SCLB	94-98
Rising Star	SeedWay	W	se	79	SBW	96-98
Silver King	Novartis	W	se	82	CR,NCLB,SBW	97,98
Silver Princess	Novartis	W	se	.	—	98
Silver Queen	SeedWay	W	su	92	NCLB,SBW,SCLB	94-98
Sir Galahad	Stokes	BC	se	85	—	95-98
Snow Belle	Asgrow	W	se	85	R,SCLB	95-98
SV-7004	Seneca	Y	sh2	.	—	98
Victor	Ferry-Morse	Y	sh2	80	CS,NCLB	96-98
WH-4487	Novartis	W	se	.	—	97-98
WHT-2972	Novartis	W	se	.	—	98
XPH-3084	Asgrow	Y	sh2	.	—	98
XPH-3113	Asgrow	W	se	.	—	98

. = not available; — = none; from seed catalogues.
[1]Disease: 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

TABLE 3. YIELD OF SELECTED SWEET CORN VARIETIES

Variety	Type	Percent stand	Yield lbs/a	Ear #/a	Ear set ht. in
		GULF COAST SUBSTATION			
Empire	Y se	104	18,313	34,031	18
GH-4881	Y se	103	16,321	31,853	16
Horizon	Y se	94	8,835	27,860	8
Merit	Y se	65	5,867	12,433	18
Legend	Y se	29	3,812	9,166	8
R^2			***0.91***	***0.93***	***0.79***
CV			***20***	***16***	***21***
lsd			***3,163***	***5,073***	***4***

TABLE 3, CONTINUED. YIELD OF SELECTED SWEET CORN VARIETIES

Variety	Type	Percent stand	Yield lbs/a	Ear #/a	Ear set ht. in
GULF COAST SUBSTATION, continued					
GSS-3577	Y sh2	104	16,680	36,300	20
XPH-3084	Y sh2	98	12,782	25,319	25
GSS-1526	Y sh2	99	11,670	29,857	23
SV-7004	Y sh2	112	11,298	26,136	20
Punchline	Y sh2	97	9,547	23,414	20
Challenger	Y sh2	49	6,516	15,428	16
Prime Time	Y sh2	53	4,937	11,707	19
Victor	Y sh2	48	4,637	9,529	17
Forever	Y sh2	50	3,671	8,258	20
Prime Plus	Y sh2	25	2,046	5,899	18
R^2			***0.78***	***0.84***	***0.50***
CV			***33***	***26***	***15***
lsd			***3,947***	***7,130***	***4***
CHILTON AREA HORTICULTURE SUBSTATION					
Sir Galahad	BC se	.	8,425	15,337	.
BC-4885	BC se	.	7,674	15,881	.
BC-7182	BC se	.	5,224	8,531	.
Fantasia	W se	.	8,856	14,248	.
WH-4487	W se	.	8,042	14,520	.
Rising Star	W se	.	7,893	9,620	.
XPH-3113	W se	.	6,995	19,784	.
Silver Princes	W se	.	6,508	15,065	.
WHT-2972	W se	.	6,475	14,883	.
Silver Queen	W su	.	4,039	4,810	.
Silver King	W se	.	3,477	5,717	.
Snow Belle	W se	.	479	1,089	.
R^2			***0.40***	***0.57***	
CV			***42***	***39***	
lsd			***1,307***	***6,897***	
UPPER COASTAL PLAIN SUBSTATION					
BC-7182	BC se	69	2,523	5,082	11
BC-4885	BC se	60	2,178	5,808	11
Sir Galahad	BC se	77	1,452	3,267	10
Silver Princess	W se	92	16,063	12,524	13
WHT-2972	W se	75	11,652	23,595	10
Fantasia	W se	79	11,525	17,787	13
Silver Queen	W su	87	5,808	15,972	14
XPH-3113	W se	79	5,264	9,801	11
Rising Star	W se	36	3,340	6,353	5
WH-4487	W se	39	2,124	4,538	5
Silver King	W se	36	1,634	4,175	6
Snow Belle	W se	41	1,634	5,627	6
R^2			***0.78***	***0.63***	***0.49***
CV			***66***	***71***	***50***
lsd			***7,817***	***14,762***	***10***

TABLE 4. EAR CHARACTERISTICS OF SELECTED SWEET CORN VARIETIES

Variety	Type	Quality rating[1]	Tip cover rating[2]	Ear fill rating	Eye appeal rating	Ear length in	Ear diameter in	Cob diameter in
				GULF COAST SUBSTATION				
GH-4881	Y se	13.06	4.89	4.36	3.81	7.9	1.5	0.8
Merit	Y se	12.50	4.40	4.25	3.85	8.0	1.7	1.0
Legend	Y se	12.40	4.90	3.95	3.55	6.7	1.6	0.8
Empire	Y se	11.75	3.60	4.30	3.85	8.8	1.7	0.7
Horizon	Y se	10.60	4.70	3.05	2.85	6.3	1.6	0.8
R²		***0.30***	***0.45***	***0.37***	***0.29***	***0.61***	***0.39***	
CV		***10***	***13***	***16***	***17***	***10***	***7***	
lsd		***0.97***	***0.49***	***0.90***	***0.70***	***0.70***	***0.1***	
				GULF COAST SUBSTATION				
Prime Time	Y sh2	14.00	4.95	4.90	4.15	7.0	1.4	0.7
Punchline	Y sh2	14.00	4.93	4.87	4.20	6.6	1.6	0.8
GSS-3577	Y sh2	13.70	4.90	4.70	4.10	6.5	1.6	0.6
XPH-3084	Y sh2	13.67	4.87	4.73	4.07	7.3	1.7	0.9
Challenger	Y sh2	13.27	5.00	4.40	3.87	7.2	1.6	0.8
GSS-1526	Y sh2	13.10	4.85	4.25	4.00	7.6	1.5	0.7
Prime Plus	Y sh2	12.55	4.75	4.25	3.55	6.7	1.5	0.7
Victor	Y sh2	12.35	4.20	4.40	3.75	7.6	1.7	0.7
Forever	Y sh2	12.13	4.80	3.93	3.40	7.3	1.5	0.8
SV-7004	Y sh2	11.60	3.70	4.10	3.80	7.6	1.7	0.6
R²		***0.40***	***0.43***	***0.26***	***0.20***	***0.32***	***0.46***	
CV		***8***	***10***	***12***	***13***	***9***	***6***	
lsd		***0.70***	***0.50***	***0.48***	***0.37***	***0.80***	***0.1***	
				CHILTON AREA HORTICULTURE SUBSTATION				
BC-7182	BC se	13.75	5.00	4.50	4.25	7.6	1.5	0.6
BC-4885	BC se	12.75	5.00	4.00	3.75	7.5	1.4	0.4
Sir Galahad	BC se	12.50	4.50	4.00	4.00	7.8	1.6	0.8
Rising Star	W se	14.25	5.00	4.75	4.50	7.6	1.6	0.7
Silver King	W se	12.75	4.75	4.00	4.00	7.7	1.4	0.5
Silver Queen	W su	12.75	5.00	3.75	4.00	7.4	1.3	0.4
Snow Belle	W se	12.00	4.00	4.00	4.00	7.1	1.5	0.6
WH-4487	W se	12.00	4.00	4.00	4.00	7.1	1.5	0.7
Silver Princess	W se	11.00	2.67	4.33	4.00	7.2	1.5	0.6
Fantasia	W se	10.00	4.00	3.25	2.75	7.2	1.4	0.6
XPH-3113	W se	9.25	3.00	3.25	3.00	6.5	1.5	0.7
WHT-2972	W se	8.00	2.00	3.00	3.00	6.4	1.6	0.6
R²		***0.79***	***0.83***	***0.48***	***0.54***			
CV		***11***	***11***	***16***	***16***			
lsd		***1.87***	***0.92***	***0.87***	***0.79***			

[1]Quality rating is the sum of tip cover, ear fill, and eye appeal ratings.
[2]Tip cover, ear fill, and eye appeal ratings: 5 = excellent; 4 = good; 3 = fair; 2 = poor; 1 = very poor.

TABLE 4, CONTINUED. EAR CHARACTERISTICS OF SELECTED SWEET CORN VARIETIES

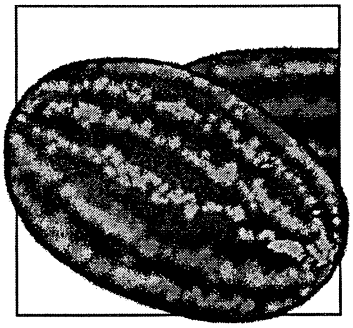
Variety	Type	Quality rating[1]	Tip cover rating[2]	Ear fill rating	Eye appeal rating	Ear length in	Ear diameter in	Cob diameter in
			UPPER COASTAL PLAIN SUBSTATION					
Sir Galahad	BC se	9.0	3.0	3.0	3.0	.	.	.
BC-4885	BC se	8.0	2.5	2.5	3.0	.	.	.
BC-7182	BC se	8.0	3.0	2.5	2.5	.	.	.
Silver King	W se	11.5	3.5	4.0	4.0	.	.	.
WH-4487	W se	10.5	3.5	3.5	3.5	.	.	.
XPH-3113	W se	9.5	3.0	3.5	3.0	.	.	.
Rising Star	W se	9.0	3.0	3.0	3.0	.	.	.
Fantasia	W se	8.0	2.5	3.0	2.5	.	.	.
Snow Belle	W se	7.5	2.5	2.5	2.5	.	.	.
WHT-2972	W se	7.5	2.5	2.5	2.5	.	.	.
Silver Queen	W se	7.0	2.5	2.0	2.5	.	.	.
Silver Princess	W se	6.5	2.0	2.0	2.5	.	.	.
R^2		***0.52***	***0.45***	***0.63***	***0.41***	.	.	
CV		***23***	***24***	***23***	***28***	.	.	
lsd		***4.1***	***1.5***	***1.4***	***1.7***	.	.	

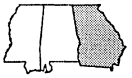
[1]Quality rating is the sum of tip cover, ear fill, and eye appeal ratings.
[2]Tip cover, ear fill, and eye appeal ratings: 5 = excellent; 4 = good; 3 = fair; 2 = poor; 1 = very poor.

TABLE 5. RECOMMENDATION FOR DISPOSITION OF SWEET CORN EXPERIMENTALS[1]

Experimental (Source)	Type	Disposition	Comment
BC-4585 (Novartis)	BC se	Keep	Good ear quality and yield
BC-7182 (Novartis)	BC se	Keep	Good ear quality and yield
GH-4881 (Novartis)	Y se	Sure Keep	Good yield and ear quality
GSS-3577 (Novartis)	Y sh2	Keep	Attractive; high yield
XPH-3084 (Asgrow)	Y sh2	Keep	High yield despite plant growth, seem to be affected by extreme heat
GSS-1526 (Novartis)	Y sh2	Re-test	Looks good
SV-7004 (Seneca)	Y sh2	Re-test	Few tillers, looks good
WH-4487 (Novartis)	W se	Drop	Good yield, marginal ear quality
WHT-2972 (Novartis)	W se	Drop	Good yield, poor ear quality
XPH-3113 (Asgrow)	W se	Drop	Average yield, marginal ear quality

[1]Based only on 1998 trials





Watermelon Trial at the University of Georgia's Bamboo Farm, Savannah, GA

George Boyhan, Darbie Granberry, and Pam Lewis

Seventeen varieties were included in this trial (Table 1). There were six triploid (seedless) entries. This represents an important trend in the watermelon industry with the adoption of more triploid production. The remainder of the entries, with the exception of AU-Producer, were F_1 hybrids. The experimental design was a randomized complete block design with four replications.

Each plot consisted of 10 hills with an in-row spacing of 5 feet and between-row spacing of six feet. Plots were fertilized according to University of Georgia soil test recommendations. Before planting the equivalent of 400 pounds per acre of 15-0-14 was broadcast over the field. Entries were seeded in the greenhouse on April 6 and transplanted to the field on May 5. Curbit herbicide was applied after transplanting according to label directions. Plots were hand weeded once the first week of June. On June 22, an additional 400 pounds per acre of 15-0-14 were applied. Plots were overhead irrigated as needed.

Watermelons were harvested twice on July 2 and 9. Each melon was weighed and the results recorded. In addition, two representative melons from each plot were chosen and additional measurements recorded. Additional measurements included length, width, rind thickness, soluble solids, and melon type (Table 2).

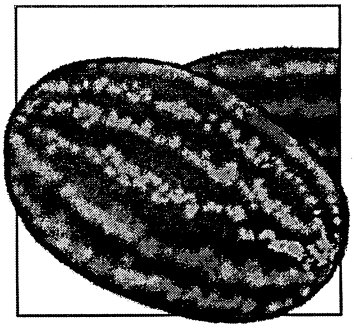
Table 1. Ratings of 1998 Watermelon Variety Trial[1]

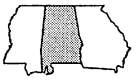
Location	UGA Bamboo Farm
Weather	5
Fertility	5
Irrigation	5
Pests	5
Overall	5

[1]See introduction for a description of rating scales.

TABLE 2. WATERMELON VARIETY TRIAL RESULTS (UGA BAMBOO FARM, NEAR SAVANNAH, GA)

Variety	Market. yield lbs/a.	Soluble solids %	Fruit distribution >30 %	30-21 %	20-11 %	<11 %	Fruit wt. lbs	Fruit length in	Fruit width in	Rind thickn. in	Melon type	Seed source
Pinata	61,540	10.4	2	27	59	12	17.1	14.1	8.6	0.7	Allsweet	Willhite
StarBrite	60,971	10.3	0	22	69	9	16.3	12.9	8.6	0.6	Jubilee	Asgrow
Arriba!	57,107	9.9	1	16	71	12	15.6	12.3	8.3	0.6	Jubilee	Hollar
Vista	55,289	10.6	1	30	57	12	17.5	12.2	8.8	0.6	Jubilee	Hollar
Stars'N Stripes	53,101	10.3	2	25	59	14	17.2	15.2	7.8	0.8	Jubilee	Asgrow
StarGazer	53,053	9.8	0	24	66	10	16.8	14.4	7.8	0.8	Allsweet	Asgrow
SXW-5045	51,137	10.1	2	21	73	4	17.6	15.5	8.2	0.7	Allsweet	Sunseed
Huck Finn	50,339	10.9	1	15	69	15	15.9	13.5	8.7	0.6	Jubilee	Harris Moran
Legacy	46,363	10.4	1	22	64	13	16.8	14.0	8.5	0.8	Allsweet	Willhite
Festival	39,630	9.4	1	27	66	6	17.1	15.0	8.1	0.7	Allsweet	Willhite
Constitution	34.209	9.7	0	0	50	50	11.2	8.9	8.0	0.5	Ice Box Seedless	Sunseed
Revolution	26,405	10.4	0	5	68	27	13.6	13.1	8.1	0.7	Jubilee Seedless	Sunseed
Sapphire	23,633	10.8	0	16	53	31	14.5	12.4	8.8	0.7	Ice Box Seedless	Hollar
Freedom	22,984	10.6	0	10	81	9	14.7	13.1	8.2	0.6	Jubilee Seedless	Sunseed
Boston	17,869	10.9	0	0	35	65	10.7	9.1	8.3	0.6	Ice Box Seedless	Sunseed
Sterling	17,235	10.4	0	8	64	28	14.2	11.6	8.1	0.7	Jubilee Seedless	Hollar
AU-Producer	12,627	9.4	0	11	54	35	13.0	10.2	8.8	0.7	Crimson Sweet	Auburn University
R^2	***0.42***	***0.26***										
CV	***52***	***9***										
lsd	***20,104***	***0.7***										





Interest Increases in Triploid Watermelon

Edgar Vinson, Eric Simonne, Brian Gamble, Arnold Caylor, Joe Little, Randall Rawls, and Larry Wells

Watermelon varieties were tested at the Wiregrass Substation (WS) in Headland, the Lower Coastal Plain Substation (LCPS) in Camden, the Upper Coastal Plain Substation (UCPS) in Winfield, and the North Alabama Horticulture Substation (NAHS) in Cullman.

Watermelons were established on plots consisting of two rows each 60 feet long and eight feet wide at a hill spacing of approximately 10 feet. Six-week-old transplants were established on April 9 at WS, April 30 at LCPS, May 15 at UCPS, and May 12 at NAHS. At WS, watermelons were transplanted on bare ground and were overhead irrigated. At LCPS and UCPS, they were transplanted on bare ground and were drip irrigated. At NAHS, watermelons were planted on raised beds covered with white-plastic mulch and were drip irrigated.

At LCPS, one ton per acre of lime and 13-13-13 fertilizer at a rate of 300 lbs per acre were applied preplant. Ammonium nitrate (NH_4NO_3) was sidedressed at a rate of 40 pounds of nitrogen (N) per acre at layby. Weed control was provided by an application of Poast on May 18 at a rate of 1.5 pints per acre and hand weeding on June 16.

At UCPS, 30 pounds of N as $Ca(NO_3)_2$ were preplant incorporated. Preemergence herbicide used was Poast (at a rate of two pints per acre) on June 18. Alleys were hand-weeded as needed. An injection of 30 pounds of N per acre as $Ca(NO_3)_2$ was made at fruit set on June 9.

At NAHS, two separate fields were used: one for the diploid (seeded) variety test and one for the triploid (seedless) variety test. Cultural practices were similar for both tests. Preplant fertilization consisted of an application of NH_4NO_3 at a rate of 120 pounds of N per acre on April 24. Alanap 4L herbicide was applied on June 1 at a rate of eight quarts per acre. Other herbicides used were Round-Up Ultra on July 29 at a rate of 4.7 pints per acre and Gramoxone at a rate of 3.0 pints per acre on June 1. Fungicides used were Bravo Weather Stik at a rate of three pints per acre on June 9, June 26, and July 10; and Mankocide at a rate of 2.5 pounds per acre on May 23 and 29. Insecticides used were Adios (at a rate of 1.5 pints per acre) on June 9; and Asana XL (at a rate of six ounces per acre) on June 18, June 26, and July 10.

Table 1. Ratings of 1998 Watermelon Variety Trials[1]

Location	WS	LCPS	UPCS	—NAHS[2]—	
				2x	3x
Weather	5	5	5	5	5
Fertility	5	5	5	5	5
Irrigation	5	5	5	5	5
Pests	5	5	5	5	5
Overall	2	5	5	5	4

[1]See introduction for a description of rating scales.
[2]2x = diploid test (seeded); 3x = triploid test ('seedless')

Watermelons were once-over harvested on Juy 1 at LCPS, July 29 at UCPS, July 13 (diploid test) and July 28 (triploid test) at NAHS. Due to a low stand count, data from WS were not reported.

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 to be measured for soluble solids levels, which is often used to evaluate sweetness (Table 3). Due to uneven plant stand and low plant population, results of the WS test are not reported. Watermelons with soluble solid levels of less than 10° Brix do not taste sweet. Brix is a measure of sweetness. One degree Brix is equal to one gram of sugar in 100 grams of water.

Jubilee, allsweet, and triploid varieties were evaluated separately. In both jubilee tests (LCPS and NAHS), yields of 'Crimson Glory' (the only Crimson-sweet type entry in 1998) were significantly lower than those of the top jubilee varieties. However, at both tests 'Crimson Glory' was the sweetest variety. Differences among yields of the jubilee entries were not significant. Yet, 'StarBrite' at LCPS and

'Arriba!' at NAHS were the best performers. 'Vista' was noticed as having the largest melons, the best flavor, and pleasant flesh texture.

In the allsweet test (UCPS), the standard 'Royal Sweet' had significantly lower marketable yield than 'Regency' and 'Royal Star'. 'Fiesta', another older standard, also performed well. The two experimentals 'RWM-8036' and 'RWM-8052' had the lowest yields and the lowest soluble solid levels. This was mainly due to these two experimentals not being quite ripe on the day of harvest, when other entries were. Because of a longer day-to-maturity requirement, these two experimentals were not attractive.

Thirteen triploid entries were evaluated this year. This reflects the increased interest for triploid melons by consumers, distributors, and brokers. The standard 'Tri-X 313' along with 'Tri-X Shadow' were the top performers, while only 'Van 3F-1004' has significantly lower yields. 'Sterling' had the largest mean fruit weight.

Rind thickness is used as an indicator of shipping ability and resistance to bruising and to splitting during handling. For all varieties, rind thickness ranged between 0.5 and 0.75 inch.

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

Variety	Type[1]	Seed source	Fruit shape	Flesh color	Days to harvest	Disease claims[2]	Years evaluated
Arriba!	JU F1	Hollar	Oblong	Red	82	ANT,FW	97,98
Carnival	AS F1	Novartis	Blocky	Red	86	ANT,FW	97,98
Crimson Glory	CS F1	Petoseed	Round	Red	82	FW	96-98
Desert King	JU OP	Kelly	Elongated	Yellow	.	.	98
Favorite Ball	xxx F1	Van Diepen	Round	Red	.	.	98
Ferrari	AS F1	Shamrock	Elongated	Red	.	.	97,98
Fiesta	AS F1	Novartis	Elongated	Red	85	.	97,98
Genesis	xxx F1	Shamrock	Blocky	Red	.	.	98
Jubilee II	JU OP	Asgrow	Elongated	Red	90	ANT,FW	97,98
Laurel	xxx F1	SeedWay	Round	Red	.	.	94,98
Mardi Gras	AS F1	Novartis	Elongated	Red	86	ANT,FW	97,98
Regency	AS F1	Petoseed	Elongated	Red	83	ANT,FW	94,96-98
Royal Flush	AS F1	Petoseed	Elongated	Red	.	.	98
Royal Star	AS F1	Petoseed	Elongated	Red	.	.	98
Royal Sweet	AS F1	Petoseed	Elongated	Red	85	ANT,FW	94,96-98
RWM-8036	AS F1	Novartis	Blocky	Red	.	.	98
RWM-8052	AS F1	Novartis	Blocky	Red	.	.	98
Saphire	CS F1	Hollar	Round	Red	.	.	98
SSC-46072	xxx F1	Shamrock	Blocky	Red	.	.	98
Stars'N Stripes	JU F1	Asgrow	Elongated	Red	85	ANT,FW	97,98
Starbrite	JU F1	Asgrow	Oblong	Red	85	ANT,FW	97,98
StarGazer	AS F1	Asgrow	Oblong	Red	85	ANT,FW	98
Sterling	xxx F1	Hollar	Blocky	Red	.	.	98
Sugar Baby	IB OP	Kelly	Round	Red	.	.	94,98
Tri-X 313	xxx F1	American Sunmelon	Blocky	Red	.	.	96-98
Tri-X Shadow	xxx F1	American Sunmelon	Blocky	Red	.	.	96-98
Tri-X Sunrize	xxx F1	American Sunmelon	Blocky	Red	.	.	96-98
Van 3F-855	xxx F1	Van Diepen	Blocky	Red	.	.	98
Van 3F-1004	xxx F1	Van Diepen	Blocky	Red	.	.	98
Van 3F-1404	xxx F1	Van Diepen	Blocky	Red	.	.	98
Van 3F-1510	xxx F1	Van Diepen	Blocky	Red	.	.	98
Van 3F-1564	xxx F1	Van Diepen	Blocky	Red	.	.	98
Vista	JU F1	Hollar	Elongated	Red	.	.	98

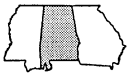
. = not available; — = none; from seed catalogues

[1]F1 = Hybrid; xxx = Triploid

[2]Disease Claims: ANT = Anthracnose; FW = Fusarium Wilt

TABLE 3. YIELD AND FRUIT CHARACTERISTICS OF SELECTED WATERMELON VARIETIES

Variety	Type	Percent stand	Marketable yield lbs/a	Marketable fruits #/a	Individual fruit wt. lb	Soluble solids °Brix	Hollow heart in
LOWER COASTAL PLAIN SUBSTATION							
StarBrite	Jubilee	.	58,275	3,164	18	10.0	0
Jubilee II	Jubilee	.	55,315	2,997	19	8.4	0
Stars'n Stripes	Jubilee	.	54,298	3,404	16	10.6	0
Arriba!	Jubilee	.	53,835	3,275	16	7.9	0
Desert King	Jubilee	.	50,320	3,293	15	7.9	0
Vista	Jubilee	.	46,528	2,202	22	10.4	0
Sugar Baby	Ice Box	.	21,460	1,795	12	11.4	0
Crimson Glory	CS	.	9,990	1,036	10	11.4	0
R^2			*0.73*	*0.79*			
CV			*27*	*13*			
lsd			*17,097*	*742*			
NORTH ALABAMA HORTICULTURE SUBSTATION							
Arriba!	Jubilee	99	51,436	2,868	18	12.0	0
StarBrite	Jubilee	99	47,676	2,535	19	11.7	0
Star's N Stripes	Jubilee	99	43,348	2,442	18	11.7	0
Vista	Jubilee	50	41,766	1,850	23	12.6	0
Jubilee II	Jubilee	99	34,322	1,739	20	11.1	0
Saphire	Jubilee	99	32,542	2,165	16	11.8	0
Crimson Glory	CS	98	28,562	1,351	21	12.4	0
R^2			*0.51*	*0.65*		*0.50*	
CV			*22*	*10*		*4*	
lsd			*17,090*	*315*		*0.8*	
NORTH ALABAMA HORTICULTURE SUBSTATION							
Tri-X 313	Triploid	73	29,766	1,961	15	10.6	25
Tri-X Shadow	Triploid	75	29,034	2,146	14	10.9	0
Van 3F-1404	Triploid	70	27,521	2,627	10	10.3	50
Laurel	Triploid	75	25,395	1,480	17	11.2	0
Sterling	Triploid	68	24,654	1,184	21	9.6	75
Van 3F-855	Triploid	73	23,409	1,591	15	10.7	17
SSC-46072	Triploid	75	22,691	1,480	15	11.6	0
Van 3F-1564	Triploid	73	22,555	1,702	13	10.9	50
Tri-X Sunrise	Triploid	75	20,747	1,332	16	10.3	83
Genesis	Triploid	75	19,564	1,480	13	10.7	0
Favorite Ball	Triploid	73	19,120	1,295	15	9.4	17
Van 3F-1510	Triploid	70	19,037	1,406	14	10.6	50
Van 3F-1004	Triploid	68	10,969	851	13	10.3	50
R^2			*0.46*	*0.85*		*0.57*	
CV			*35*	*10*		*4*	
lsd			*18,590*	*266*		*1.0*	
UPPER COASTAL PLAIN SUBSTATION							
Regency	Allsweet	.	32,301	1,499	21	10.3	0
Royal Star	Allsweet	.	28,934	1,110	26	10.0	0
Fiesta	Allsweet	.	26,344	1,314	20	10.1	0
Royal Flush	Allsweet	.	25,086	1,295	19	9.7	0
Carnival	Allsweet	.	22,681	1,055	21	10.3	0
Mardi Gras	Allsweet	.	22,459	1,073	21	8.5	0
StarGazer	Allsweet	.	22,385	1,110	20	9.9	0
Royal Sweet	Allsweet	.	21,978	962	22	9.8	0
Ferrari	Allsweet	.	21,608	1,295	17	10.0	0
RWM-8036	Allsweet	.	19,943	870	23	9.6	0
RWM-8052	Allsweet	.	16,946	777	21	9.0	0
R^2			*0.32*	*0.40*		*0.38*	
CV			*29*	*15*		*8*	
lsd			*9,918*	*334*		*1.2*	



'EH-10091' Fresh-Market Tomato Performs Well in South and North Alabama

Eric Simonne, Edgar Vinson, Randy Akridge, Arnold Caylor, Ronnie McDaniel, and Malcomb Pegues

Tomato variety trials were conducted at the Gulf Coast Substation (GCS), Brewton Experiment Field (BEF) in Brewton and the North Alabama Horticulture Substation (NAHS) in Cullman (Tables 1 and 2).

Five-week-old tomatoes were transplanted on April 27 at GCS, May 1 at BEF, and May 11 at NAHS onto plastic-mulched, drip irrigated beds. At all locations, plots were 12-feet long and four-feet wide. Within-row spacing was 18 inches, which created an approximate stand of 5,800 plants per acre. Plants were staked and tied.

At GCS tomato transplants were fertilized with 20-20-20 on April 27. Nitrogen was applied at a rate of 50 pounds per acre as ammonium nitrate on May 28 and June 16. Insect control was provided by applications of Sevin (at a rate of 1.5 pints per acre) on May 4. Sevin was also applied at the rate of two pounds per acre on May 26 and June 16. Asana was used at the rate of 10 ounces per acre on June 24 and Thiodan on May 11, May 20, June 1, and June 8. The rates used for Thiodan were 1.5 pints per acre for May applications and two pints per acre for June applications. Lannate LV was applied at a rate of 1.5 pints per acre on June 25 and July 14. Fungicides used were Bravo 720 (at a rate of 1.5 pints per acre) on May 11, May 20, June 1, and June 8; and Bravo (at a rate of 1.5 pints per acre) on May 4, May 26, June 16, June 24, June 30, and July 10. Poast and Prime Oil (2 pints per acre) herbicide was applied on May 13.

At BEF, beds were fumigated with methyl bromide at a rate of 200 pounds per acre one week before transplanting. Pre-plant fertilizer (5-10-15) was applied at a rate of 500 lbs per acre on April 23. Between May 9 and July 6, fertilization consisted of weekly injections of either 10 pounds of N per acre as $Ca(NO_3)_2$ (first two weeks) or 20 pounds per acre of nitrogen as KNO_3 (remaining nine weeks).

Insect control was provided by applications of Sevin XLR (at a rate of two pints per acre) on July 15; Lannate (at a rate of two pints per acre) on June 2, June 15, and July 21; and Dibrom (at a rate of two pints per acre) on June 23.

Table 1. Ratings of 1998 Tomato Variety Trials[1]

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

[1]See introduction for a description of rating scales.

Fungicides used were Terraclor 75WP at three pounds per 100 gallons of water (each plant received 0.5 pints of the mixture on July 4 and August 2); Benlate 50WP (at a rate of one pound per acre) on May 18 and June 2; and Bravo 720 (at a rate of two pints per acre) on May 18, June 2, June 15, June 23, July 15 and July 21.

At NAHS, preplant fertilization consisted of 120 pounds of N as NH_4NO_3 on May 28. Busan was applied preplant (at a rate of 67 gallons per acre) on April 28 for nematode control. Insecticide used were Adios (at a rate of 1.5 pounds per acre) on June 9; Lannate LV (at a rate of two pints per acre) on June 18; Mattch (at a rate of two pints per acre) on June 18; and Asana XL (at a rate of 9.6 ounces per acre) on July 31. Fungicides used were Bravo (at a rate of three pints per acre) on July 31; Bravo Weather - Stik (at a rate of three pints per acre) on June 9, June 26, and July 10; Quadris (at a rate of six ounces per acre) on July 3; and Man-Kocide (at a rate of 2.5 pounds per acre) on May 23, May 29, and June 18.

Plots were harvested eight times (on June 23, June 29, July 2, July 6, July 9, July 13, July 16, and July 21) at GCS, four times at BEF (July 15, July 22, July 28, and August 3), and seven times (July 20, July 2, July 30, August 3, August 6, August 11, and August 17) at NAHS.

At all locations, fruits were harvested at the 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), Medium (D>2.3 inch), and Small (others). For fresh-market varieties, yields of the first three harvests were used to evaluate early production (Table 3). Marketable yield was calculated by combining the Jumbo, Extra-Large, and Large grades (Table 4). Performance of Roma-type and Cherry entries are presented separately (Table 5).

The list of entries in the south Alabama tests (GCS and BEF) were similar. The standards 'Sunpride' and 'Sunbeam' were among the top entries for early and total marketable yields at both locations. The old Florida standard 'Agriset 761' was out-yielded by most varieties. Yields of 'Florida 47' were high, although significantly lower that the four top entries at BEF. The experimental 'RFT-4413' show limited yield potential in this test, while 'EX-10091' appeared to be a high yielder. 'Marglobe' did not seem to be suited for commercial production in South Alabama.

In North Alabama, the standard 'Mt. Pride' performed well, along with 'EX-10091'. 'RFT-4413' did not perform well. The yield of 'Merced' were surprisingly lower than those of other varieties, and than yields recorded in previous years.

Based on the results of these tests, the experimental 'EX-10091' should be definitely kept, while 'RFT-4413' should be tested may be under cooler conditions.

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

Variety	Type[1]		Seed source	Plant habit[2]	Fruit color	Days to harvest	Disease claims[3]	Years evaluated
Agriset 761	F1	FM	UFl/Agrisales	Det	Red	—	—	97,98
Colonial	F1	FM	Petoseed	Det	Red	76	ASC,FW,St,VW	94,96-98
Emperador	F1	FM	Petoseed	Det	Red	—	—	98
EX-10091	F1	FM	Asgrow	Det	Red	—	—	98
Florida 47	F1	FM	Asgrow	Det	Red	—	—	97,98
Marglobe	OP	FM	Kelly	Det	Red	70	ASC,FW*,VW*	98
Merced	F1	FM	Novartis	Det	Red	69	FW,TbMV,VW	94-98
Mt. Belle	F1	Cherry	SeedWay	Det	Red	65	FW,VW	96,98
Mt. Fresh	F1	FM	Ferry-Morse	Det	Red	75	FW,VW	96,98
Mt. Pride	F1	FM	Stokes	Det	Red	77	ASC,FW,St,VW	96,98
Mt. Spring	F1	FM	Novartis	Det	Red	69	FW,VW	94-98
RFT-4413	F1	FM	Novartis	Det	Red	—	—	98
Shady Lady	F1	FM	Street/Sunseeds	Det	Red	—	—	98
Solar Set	F1	FM	Asgrow	Det	Red	—	SC,FW,St,VW	97,98
Springfield	F1	FM	Ferry-Morse	Det	Red	—	—	98
STM 3806	F1	Plum	Sakata	Det	Red	—	—	98
Sunbeam	F1	FM	Asgrow	Det	Red	75	FW,VM	94-98
Sunbelt	F1	FM	Petoseed	Det	Red	72	ASC,FW,NE,St,VW	96-98
Sunbrite	F1	FM	Asgrow	Det	Red	—	ASC,FW,St,VW	98
Suncrest	F1	FM	Novartis	Det	Red	—	—	98
Sunleaper	F1	FM	Novartis	Det	Red	70	—	98
Sunpride	F1	FM	Asgrow	Det	Red	80	ASC,FW,St,VW	94-98
Sunstart	F1	FM	Asgrow	Det	Red	—	—	98
Tuscany	F1	RO	Johnny's	Det	Red	75	FW,NE,VW	98

— = not available; from seed catalogues
[1]Type: F1 = Hybrid; OP = Open pollinated; FM = Fresh Market; RO = Roma (Elongated fruits); Cherry = Small, round fruits; SA = Saladette
[2]Plant Habit: Det = Determinate
[3]Disease claims: FW = Fusarium Wilt; VW = Verticillium Wilt; ASC = Alternaria Stem Canker; ST = Stemphylium (gray leaf spot); NE = Root-knot Nematodes; TbMV = Tobacco Mosaic Virus; *race1 only

TABLE 3. EARLY PRODUCTION[1] AND GRADE DISTRIBUTION OF SELECTED FRESH-MARKET TOMATO VARIETIES[2]

Variety	Percent stand	Early marketable wt.[3] lbs/a	Early jumbo wt. lbs/a	Early jumbo no. #/a	Early extra-large wt. lbs/a	Early extra-large no. #/a	Early large wt. lbs/a	Early large no. #/a	Early medium wt. lbs/a	Early medium no. #/a
GULF COAST SUBSTATION										
Solar Set	97	6,716	1,516	1,997	4,247	7,986	953	2,904	200	908
EX-10091	94	5,971	3,040	3,812	2,677	5,264	254	726	91	363
Suncrest	88	5,717	1,588	1,997	2,641	4,719	1,488	4,175	227	908
Sunleeper	81	5,654	1,443	1,815	3,049	5,627	1,162	3,449	445	1,815
Florida 47	100	5,545	1,343	1,634	2,723	5,264	1,479	4,175	172	726
Agriset 761	94	5,055	653	908	2,650	5,445	1,751	5,445	481	1,997
Sunpride	100	5,055	917	1,271	3,349	6,534	790	2,360	163	726
Sunbelt	84	4,928	1,243	1,634	2,178	4,538	1,506	4,356	354	1,452
Colonial	100	2,251	572	726	1,125	2,178	554	1,634	263	1,089
R^2		***0.31***	***0.30***							
CV		***39***	***89***							
lsd		***2,951***	***1,767***							
BREWTON EXPERIMENT FIELD										
Emperador	88	26,390	2,668	2,904	16,789	29,222	6,933	18,332	3,966	12,705
Sunstart	84	24,738	1,370	1,634	11,925	22,688	11,444	29,222	6,579	19,965
Sunbrite	81	22,439	653	726	13,667	24,684	8,118	21,236	1,981	6,897
Sunpride	88	20,700	699	726	12,542	21,962	7,460	19,602	3,539	10,890
Sunbeam	81	20,246	1,398	1,452	12,469	21,236	6,380	15,972	1,661	4,538
Florida 47	81	19,756	898	1,089	13,631	24,503	5,227	13,613	1,724	5,627
Shady Lady	88	19,094	599	726	12,533	23,051	5,962	15,428	2,713	8,349
RFT-4413	88	12,669	299	363	7,206	13,613	5,164	14,157	2,750	8,349
Agriset 761	84	9,202	327	363	6,035	10,890	2,840	7,260	5,627	3,449
Marglobe	84	3,312	145	182	1,425	2,723	1,742	4,538	1,643	4,538
R^2		***0.63***	***0.29***							
CV		***34***	***145***							
lsd		***8,800***	***1,867***							

[1]Combined productions of the first three harvests at each location.
[2]Grades and corresponding fruit diameters (D) for fresh-market tomato were Jumbo (D>3.5 inch), Extra-large (D>2.9 inch), Large (D>2.5 inch), Medium (D>2.3 inch), and Small (others).
[3]Marketable production calculated by combining the Jumbo, Extra-Large and, Large grades

TABLE 3, CONTINUED. EARLY PRODUCTION[1] AND GRADE DISTRIBUTION OF SELECTED FRESH-MARKET TOMATO VARIETIES[2]

Variety	Percent stand	Early marketable wt.[3] lbs/a	Early jumbo wt. lbs/a	Early jumbo no. #/a	Early extra-large wt. lbs/a	Early extra-large no. #/a	Early large wt. lbs/a	Early large no. #/a	Early medium wt. lbs/a	Early medium no. #/a
NORTH ALABAMA HORTICULTURE SUBSTATION										
EX-1009	100	37,313	24,974	38,115	11,059	25,773	1,280	4,356	2,917	5,808
Mt. Pride	94	36,213	11,286	20,147	20,604	50,820	4,323	15,065	3,487	14,702
Springfield	97	33,532	16,466	27,225	15,774	35,211	1,292	5,445	3,630	8,349
Mt. Fresh	100	31,779	15,961	27,044	13,251	32,307	2,566	8,168	3,659	6,353
Mt. Spring	100	29,675	12,636	21,780	14,280	28,677	2,759	8,894	2,490	9,438
Florida 47	97	28,169	13,711	24,866	12,669	27,770	1,790	6,353	2,189	7,805
Sunpride	100	24,354	10,750	22,143	11,520	27,225	2,084	6,716	1,526	4,901
RFT-4413	97	21,183	8,667	15,609	11,266	26,136	1,251	4,538	2,067	5,808
Merced	97	21,105	11,258	14,157	7,467	17,061	2,379	7,623	4,175	11,798
R^2		***0.56***	***0.84***							
CV		***31***	***32***							
lsd		***14,851***	***9,683***							

[1]Combined productions of the first three harvests at each location.
[2]Grades and corresponding fruit diameters (D) for fresh-market tomato were Jumbo (D>3.5 inch), Extra-large (D>2.9 inch), Large (D>2.5 inch), Medium (D>2.3 inch) and Small (others).
[3]Marketable production calculated by combining the Jumbo, Extra-Large, and Large grades

TABLE 4. TOTAL PRODUCTION[1] AND GRADE DISTRIBUTION OF SELECTED FRESH-MARKET TOMATO VARIETIES[2]

Variety	Percent stand	Total marketable wt.[3] lbs/a	Total jumbo wt. lbs/a	Total jumbo no. #/a	Total extra-large wt. lbs/a	Total extra-large no. #/a	Total large wt. lbs/a	Total large no. #/a	Total medium wt. lbs/a	Total medium no. #/a	Total cull lbs/a	Individual fruit wt. lb
GULF COAST SUBSTATION												
Florida 47	100	35,383	3,185	3,993	18,232	36,845	13,966	39,749	2,949	11,616	6,688	0.55
EX-10091	94	34,431	8,766	11,072	21,363	41,019	4,302	12,524	753	3,086	4,565	0.47
Sunpride	100	32,797	1,325	1,815	17,596	35,030	13,876	39,749	5,608	22,325	3,902	0.54
Solar Set	97	32,008	3,176	4,175	18,413	35,211	10,418	28,677	3,557	13,794	4,565	0.52
Sunleeper	81	27,071	2,732	3,449	16,544	32,670	7,795	22,869	2,360	9,620	4,801	0.51
Agriset 761	94	24,974	1,488	1,997	14,702	29,040	8,785	25,410	3,303	13,250	8,766	0.51
Colonial	100	19,820	735	908	12,451	23,595	6,634	19,058	2,396	9,983	10,727	0.53

[1]Combined total production of eight harvests at GCS, four at BEF, and seven at NAHS.
[2]Grades and corresponding fruit diameters (D) were Jumbo (D>3.5 inch), Extra-large (D>2.9 inch), Large (D>2.5 inch), Medium (D>2.3 inch), and Small (others).
[3]Marketable production and individual fruit weight calculated by combining the Jumbo, Extra-Large, and Large grades

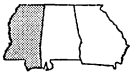
TABLE 4, CONTINUED. TOTAL PRODUCTION[1] AND GRADE DISTRIBUTION OF SELECTED FRESH-MARKET TOMATO VARIETIES[2]

Variety	Percent stand	Total marketable wt.[3] lbs/a	Total jumbo wt. lbs/a	Total jumbo no. #/a	Total extra-large wt. lbs/a	Total extra-large no. #/a	Total large wt. lbs/a	Total large no. #/a	Total medium wt. lbs/a	Total medium no. #/a	Total cull lbs/a	Individual fruit wt. lb
GULF COAST SUBSTATION, continued												
Suncrest	88	18,023	2,686	3,449	9,511	17,606	5,826	16,517	2,169	8,712	8,785	0.56
Sunbelt	84	16,453	1,370	1,815	8,594	17,061	6,489	18,513	2,378	9,257	14,302	0.55
R^2		***0.58***	***0.60***									
CV		***25***	***79***									
lsd		***9,885***	***3,248***									
BREWTON EXPERIMENT FIELD												
Emperador	88	36,799	2,668	2,904	21,680	39,204	12,451	33,215	8,658	24,684	11,144	0.59
Sunbrite	81	28,183	653	726	16,362	29,766	11,168	29,222	3,959	12,524	10,972	0.62
Sunstart	84	27,588	1,370	1,634	12,732	24,321	13,485	34,848	10,518	29,040	11,498	0.67
Sunbeam	81	27,352	1,398	1,452	16,417	28,133	9,538	23,958	3,276	9,801	12,015	0.61
Sunpride	88	25,428	699	726	13,966	24,866	10,763	27,225	6,815	19,239	10,137	0.65
Florida 47	81	25,229	898	1,089	16,634	30,311	7,696	20,328	3,449	10,709	8,231	0.54
Shady Lady	88	23,414	599	726	14,003	25,955	8,812	23,414	4,674	13,794	7,414	0.56
Agriset 761	84	18,332	27	363	10,790	20,147	7,215	19,602	8,140	11,435	19,221	0.59
RFT-4413	88	16,217	299	363	8,276	15,972	7,641	21,054	5,663	15,972	9,467	0.64
Marglobe	84	4,084	145	182	1,688	3,267	2,251	5,990	2,786	6,534	15,074	1.19
R^2		***0.65***	***0.29***									
CV		***30***	***143***									
lsd		***10,143***	***1,867***									
NORTH ALABAMA HORTICULTURE SUBSTATION												
Mt. Fresh	100	62,743	23,252	39,930	31,746	74,778	7,745	24,684	3,659	6,353	10,226	0.37
EX-10091	100	59,824	35,877	55,539	21,257	49,550	2,690	8,168	2,917	5,808	9,071	0.37
Mt. Pride	94	50,844	13,044	23,595	29,365	76,956	8,434	29,040	3,487	14,702	11,404	0.34
Springfield	97	47,807	20,197	33,578	24,127	53,906	3,483	12,705	3,630	8,349	9,010	0.37
Florida 47	97	44,660	19,032	34,304	21,571	49,550	4,057	13,794	2,189	7,805	7,739	0.35
Sunpride	100	42,172	13,300	26,862	24,299	53,724	4,572	15,065	1,526	4,901	4,632	0.36
RFT-4413	97	40,877	12,910	22,506	23,787	55,358	4,180	14,339	2,067	5,808	6,861	0.35
Mt. Spring	100	35,529	13,778	23,777	17,939	39,386	3,812	12,887	2,490	9,438	6,436	0.37
Merced	97	27,243	12,460	16,335	11,485	25,592	3,298	10,346	4,175	11,798	7,447	0.56
R^2		***0.56***	***0.85***									
CV		***28***	***31***									
lsd		***20,386***	***11,601***									

[1]Combined total production of eight harvests at GCS, four at BEF, and seven at NAHS.
[2]Grades and corresponding fruit diameters (D) were Jumbo (D>3.5 inch), Extra-large (D>2.9 inch), Large (D>2.5 inch), Medium (D>2.3 inch), and Small (others).
[3]Marketable production and individual fruit weight calculated by combining the Jumbo, Extra-Large, and Large grades

TABLE 5. EARLY AND TOTAL YIELD OF SELECTED CHERRY AND SALADETTE TOMATO VARIETIES AT THE NORTH ALABAMA HORTICULTURE SUBSTATION

Variety	Percent stand	Early marketable wt. lbs/a	Total marketable lbs/a	Individual fruit wt. lb.
Tuscany	100	56,044	82,700	0.23
STM-3806	94	38,151	57,160	0.20
Mt. Belle	100	49,920	47,030	0.04
R^2		***0.56***	***0.56***	
CV		***31***	***28***	
lsd		***14,851***	***20,386***	



North Mississippi Strawberry Trials

Kent Cushman and Thomas Horgan

This study was located at the North Mississippi Research and Extension Center in Verona, Mississippi, on a Quitman silt loam soil. Three cultivars of strawberries were planted into a plasticulture production system in a randomized complete block design with four replications.

Plant beds were formed six inches high and 30 inches wide at the top with a press-pan-type bed shaper. Methyl bromide fumigant was applied during bed formation at the rate of 350 pounds per acre. Preplant fertilizer was banded in both sides of the plant bed at the rate of 2.5 pounds of 9-18-21 (N-P_2O_5-K_2O) per 100 feet of row. Black plastic mulch and drip irrigation tubing were installed immediately after bed formation.

Fresh-dug 'Chandler' plants were obtained from a California nursery. Fresh-dug 'Pelican' and 'MSUS-572' plants were obtained from Barbara Smith's breeding program located in Poplarville, Mississippi. 'Pelican' and 'MSUS-572' have been developed for resistance to common anthracnose. 'Chandler' plants arrived with leaves trimmed, but 'Pelican' and 'MSUS-572' leaves were not trimmed. All plants were hand-planted through the plastic on October 20. Sprinkler irrigation was applied daily for a week to favor plant establishment. Plants were spaced 12 inches apart in double rows also spaced 12 inches apart. Plots were 15 feet long and five feet wide.

There was no need for insect or disease control throughout the study. Water or fertilizer solution was applied through the drip tape on an as-needed basis. Fertilizer was applied by injecting a concentrated fertilizer solution (13.3 ounces of a high-grade soluble 20-20-20 fertilizer per gallon of water) at a 1:200 ratio to achieve a final N concentration of 100 ppm in the irrigation water.

Frost protection was provided by sprinkler irrigation on three separate occasions from early to late March. Some plantings were also covered with light-weight row cover in addition to the sprinkler frost protection. The row covers, however, did not provide significantly greater protection for early yields (data not shown).

Harvest began April 6 and ended June 3 for a total of 25 harvests. Our picking schedule was Monday, Wednesday, and Friday, and few days were missed throughout the two-month harvest period. Fruit from each plot was separated into marketable and cull and then counted and weighed.

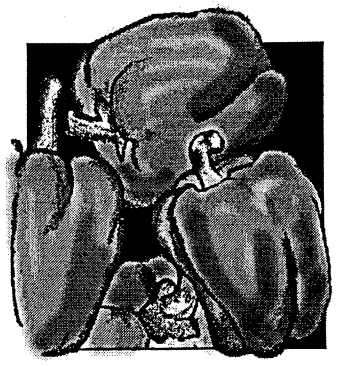
'Chandler' produced the greatest total yield and had the greatest percentage of marketable fruit. 'Chandler' is a well-known cultivar that is grown throughout the Southeast. It had excellent color and flavor. 'Chandler' exhibited noticeably fewer leaf spots throughout the spring production season despite the anthracnose resistance claimed for the other two entries.

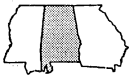
'Pelican' and 'MSUS-572' produced many hollow berries and berries with tips that split open. In fact, the problem was severe enough with 'MSUS-572' that picking was discontinued after the 14th harvest. This was unfortunate because the early yield of 'MSUS-572' was significantly higher than that of 'Chandler' or 'Pelican'. 'Pelican' berries are colored slightly orange, compared to 'Chandler' or 'MSUS-572' berries.

TABLE 1. STRAWBERRY MARKETABLE YIELD AT THE NORTH MISSISSIPPI RESEARCH AND EXTENSION CENTER

Entry	Total Yield[1]			Early Yield[2]		
	Total lbs/a	Marketable[3] %	Berry wt. oz	Early lbs/a	Marketable[3] %	Berry wt. oz
Chandler	16,740	76	0.68	2,690	81	0.95
Pelican	12,110	64	0.62	2,250	73	0.82
MSUS-572	8,010	68	0.73	5,570	78	0.82
R^2	*0.91*		*0.63*	*0.80*		*0.69*
CV	*10*		*5*	*26*		*8*
lsd	*1,330*		*0.04*	*840*		*0.07*

[1]Total yield of 25 harvests. [2]Yield of first 10 harvests.
[3]Relative number of marketable fruit as the percentage of total number harvested (marketable plus culls).





'King Arthur' and 'EXH-12261' Bell Pepper Best-Performers Under Hot Weather

Eric Simonne, Edgar Vinson, Jim Bannon, Jason Burkett, and Arnold Caylor

Bell pepper variety trials were conducted at the E.V. Smith Research Center (EVSRC) in Shorter and the North Alabama Horticulture Substation (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 established in double staggered rows one foot apart, at a within-row spacing of one foot, which created a stand of approximately 15,000 plants per acre. Planting dates were May 13 at EVSRC, May 13 at NAHS, and May 5 at UCPS.

At EVSRC, beds were fumigated with 98% Methyl Bromide + 2% Chloropicrin at a rate of 200 pounds per acre. Preplant fertilization consisted of 387 pounds of calcium nitrate (15.5-0-0) on March 26. Fertilization consisted of alternating injections of 9-0-0 (liquid calcium nitrate) and 20-20-20 twice per week at the rate of five pounds per application (10 pounds of N per week) beginning May 26 through July 23.

Mannex and Kocide fungicides were applied once weekly at a rate of two quarts per acre and two pounds per acre, respectively. Other fungicides used were Bravo 720 (at a rate of two pints per acre) on June 3 and 7; Dithane F-45 (at a rate of 2.4 quarts per acre) on June 18, June 21, June 28, and July 3; and Kocide 101 (at a rate of three pounds per acre) on June 18, June 21, and July 3.

Insect control was provided by applications of Dimethoate (at a rate of two pints per acre) on June 7; Asana XL (at a rate of 9.6 ounces per acre) on June 3, June 7, June 11, June 21, June 23, July 3, July 6, July 12, July 19, July 26, and August 2; Thiodan (at a rate of 2.5 pounds per acre) on July 12, 20, and 28; and Lannate (at a rate of three pints per acre) on July 19, July 26, and August 2.

At NAHS, following soil tests results, peppers received 80 pounds of Nitrogen per acre as ammonium nitrate. Beginning after transplanting and through final harvest, bell peppers were fertilized with weekly injections, alternatively of calcium nitrate and ammonium nitrate at a rate five pounds of N per acre each injection. This resulted in a total N application of approximately 140 pounds of N per acre. Weed control consisted of an application of Gramoxone (at a rate of three pints per acre) on June 2. Insect control was provided by applications of Adios (at a rate of 1.5 pounds per acre) on June 9; and Asana XL (at a rate of 9.6 ounces per acre) on July 3. Fungicide applications consisted of Mankocide (at a rate of 2.5 pounds per acre) on May 23 and 29; Bravo Weather Stik (at a rate of three pints per acre) on June 9; and Quadris (at a rate of six ounces per acre) on July 3.

Table 1. Ratings of 1998 Bell Pepper Variety Trials[1]

Location	WS	EVSRC	NAHS	UCPS
Weather	2	3	4	4
Fertility	5	5	5	5
Irrigation	5	5	5	5
Pests	5	5	5	5
Overall	1	4	4	4

[1]See introduction for a description of rating scales.

Harvest dates were July 9, July 13, July 28, August 12, and August 13 at EVSRC; and June 4, July 28, August 5, and August 17 at NAHS. At all locations, fruits were harvested at the specified color stage, weighed and graded (Tables 3 and 4) using the standards of the *Sweet Pepper Grader's Guide* (Circular ANR-783 of the Alabama Cooperative Extension System). The green varieties were harvested at the mature green stage, while the colored were harvested at the 1/3 to 2/3 colored stage.

The brutal change in temperature during early spring did not allow most bell pepper plantings to develop good plant architecture and foliage. As a result, plants in many fields started blooming when they reached only 16 to 18 inches. Night temperatures consistently above 80°F for most of the summer partially inhibited flowering. All trials were irrigated, but the effect of elevated temperature could not be alleviated, even when white plastic was used. As a result, marketable yields and individual pod weights were overall lower than expected.

Most differences between variety performance were not significant. For the green market, the Fall standard 'King Arthur' performed well at EVSRC and NAHS. The experimental 'EXH-12261' performed well, while 'C-64' seem to be affected by the heat. No reliable conclusion can be made for either experimental and both should be re-evaluated in early or late plantings in 1999. Among the yellow varieties, 'Admiral' performed the best, and 'X3R Aladdin' the worse. Yet, it should be noted that 'X3R Aladdin' is one of the few yellow varieties that have resistance to BLS (bacterial leaf spot) races 1,2, and 3. With the exception of 'Purple Beauty', all colored varieties developed skin color accordingly to the description of the variety characteristics. 'Purple Beauty' was black in color (like 'Black Bird'), while it is described as a purple variety. 'Peco' and 'Firenza' turned out to be jalapeno varieties.

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
Admiral	F1	Novartis	G-Y	76	BLS(1,2), PVY, TbMV	95-98
Aladdin XR3	F1	Petoseed	G-Y	—	BLS(1,2,3), TBV, TbEV	98
Black Bird	F1	Stokes	G-Bk-R	73	—	94-98
Blue Jay	F1	Stokes	P-R	73	—	94-98
Brigadier	F1	Novartis	G-R	71	LS(123), PVY	98
CA-64	F1	Shamrock	G-R	—	—	98
Camelot X3R	F1	Petoseed	G-R	74	BLS(1,2,3), TbMV	94-98
Canary	F1	Stokes	G-Y	72	TbMV	94-98
Enterprise	F1	Asgrow	G-R	77	BLS(1,2,3), TbMV	95-98
EXH-12261	F1	Asgrow	G-R	—	—	98
Firenza	F1	Novartis	Jalapeno	—	—	98
Golden Giant II	F1	Burpee	G-Y	72	—	98
King Arthur	F1	Petoseed	G-R	72	BLS(2), PVY, TbEV TbMV	94-98
Lilac	F1	Novartis	P-R	68	TbMV	94-98
Paladin	F1	Novartis	G-R	—	—	98
Pecos	F1	Novartis	Jalapeno	—	—	98
Purple Beauty	OP	Petoseed	Bk-R	74	TbMV	96-98
Sentry	F1	Novartis	G-R	70	BLS(1,2), PVY, Stip TbMV	97,98
Var. #860	F1	Novartis	G-Y	—	—	94,97,98
Yorktown	F1	Asgrow	G-R	—	—	98

[1]F1=Hybrid; OP=Open Pollinated;
[2]Color: Bk=Black; Br=Brown; G=Green; O=Orange; Pk=Pink; R=Red; W=White; Y=Yellow; P=Purple.
[3]Disease tolerance/resistance; BLS=Bacterial Leaf Spot; PVY=Potato Virus Y; TbEV=Tobacco Etch Virus; TbMV=Tobacco Mosaic Virus; TBV=Tobamovirus

TABLE 3. EARLY PRODUCTION[1] AND GRADE DISTRIBUTION OF SELECTED BELL PEPPER VARIETIES

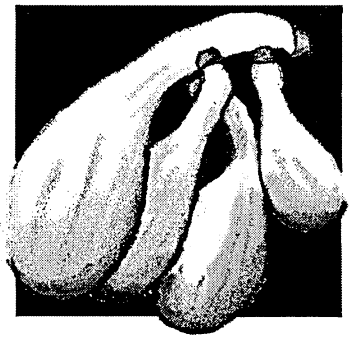
Variety	Skin color	Percent stand	Early marketable wt. lbs/a	Early fancy wt. lbs/a	Early US#1 wt. lbs/a	Early US#2 wt.. lbs/a	Early fancy no. #/a	Early US#1 no. #/a	Early US#2 no. #/a
E.V. SMITH RESEARCH CENTER									
Var. #860	Yellow	100	14,941	136	11,649	3,156	1,196	147,857	.
Purple Beauty	Black	100	14,793	1,507	8,501	4,785	2,436	109,098	.
Blue Jay	Purple	100	14,589	421	10,883	3,285	2,871	134,459	.
Black Bird	Black	100	14,412	2,876	8,091	3,445	6,388	95,540	.
King Arthur	Green	100	14,240	557	11,395	2,287	4,307	127,760	.
Admiral	Yellow	100	13,245	538	10,352	2,354	5,024	107,902	.
EXH-12261	Green	100	11,884	0	9,304	2,579	0	99,528	.
Lilac	Purple	100	11,766	108	9,422	2,237	718	119,864	.
Golden Giant II	Yellow	100	11,410	57	7,962	3,390	479	101,442	.
CA-64	Green	100	10,711	206	8,053	2,452	1,436	99,050	.
Enterprise	Green	100	9,501	124	6,876	2,500	718	92,111	.
Sentry	Green	100	7,682	122	5,280	2,280	718	66,990	.
X3R Aladin	Yellow	100	7,599	74	4,192	3,333	718	55,985	.
Canary	Yellow	100	7,496	447	4,756	2,292	3,110	68,904	.
Brigadier	Green	100	5,685	0	3,861	1,823	0	53,592	.
R^2			***0.25***	***0.24***			***0.26***		
CV			***53***	***314***			***426***		
lsd			***8,581***	***2,139***			***23,713***		
NORTH ALABAMA HORTICULTURE SUBSTATION									
Pecos	Jalapeno	93	22,168	20,788	1,380	.	.	.	.
Firenza	Jalapeno	96	18,282	17,250	1,032	.	.	.	.
King Arthur	Green	97	15,733	6,866	7,516	1,351	17,400	23,055	5,873
CA-64	Green	98	13,847	7,354	5,136	1,357	18,923	15,116	4,241
Purple Beauty	Black	94	12,883	1,253	6,247	5,383	3,480	22,076	27,840
Paladin	Green	96	11,758	5,385	4,697	1,676	11,310	16,856	6,851
Yorktown	Green	98	11,588	5,541	4,742	1,306	14,029	20,663	5,220
X3R Camelot	Green	98	11,243	6,269	4,143	830	14,790	12,833	3,154
X3R Aladin	Yellow	96	6,425	3,924	1,828	673	10,549	8,048	2,828
R^2			***0.48***	***0.79***					
CV			***38***	***43***					
lsd			***7,540***	***5,152***					

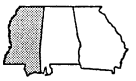
[1]Cumulative productions of the first three harvests at EVSRC; and first harvest at NAHS.

TABLE 4. TOTAL PRODUCTION AND GRADE DISTRIBUTION OF SELECTED BELL PEPPER VARIETIES

Variety	Skin color	Percent stand	Total marketable 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 fruit wt. lb
E. V. SMITH RESEARCH CENTER											
King Arthur	Green	100	23,121	983	17,391	4,747	28,815	7,656	187,333	.	0.13
EXH-12261	Green	100	22,903	242	16,709	5,953	31,660	1,196	180,395	.	0.36
Blue Jay	Purple	100	21,255	421	14,176	6,658	29,267	2,871	174,653	.	0.15
Purple Beauty	Purple	100	20,111	1,565	11,084	7,462	22,978	3,110	137,330	.	0.54
Var 860	Yellow	100	19,578	333	14,274	4,972	24,987	2,632	179,677	.	0.13
Admiral	Yellow	100	18,236	601	13,087	4,548	26,164	5,503	138,526	.	0.11
Enterprise	Green	100	17,949	352	11,960	5,637	23,513	957	149,531	.	0.56
Black Bird	Black	100	17,382	2,876	9,728	4,778	21,152	6,388	116,115	.	0.45
Lilac	Purple	100	15,881	108	11,967	3,806	21,934	718	147,617	.	0.15
Sentry	Green	100	15,487	156	9,560	5,771	23,872	957	116,993	.	0.16
X3R Aladin	Yellow	100	14,963	677	8,790	5,496	21,786	5,742	100,964	.	0.12
CA-64	Green	100	14,199	426	10,551	3,223	24,466	3,828	123,692	.	0.12
Brigadier	Green	100	13,743	1,081	7,950	4,711	20,662	5,264	91,872	.	0.22
Golden Giant II	Yellow	100	13,254	57	8,826	4,371	13,252	479	112,687	.	0.12
Canary	Yellow	100	12,573	775	7,192	4,606	20,178	6,221	100,007	.	0.13
R^2			***0.23***	***0.22***				***0.25***			
CV			***40***	***218***				***306***			
lsd			***10,003***	***2,205***				***24,102***			
NORTH ALABAMA HORTICULTURE SUBSTATION											
Pecos	Jalapeno	93	33,741	32,361	1,380	.	.	.	.	.	.
King Arthur	Green	97	30,554	12,090	14,201	4,264	4,102	30,776	42,521	18,923	0.39
CA-64	Green	98	30,397	14,061	11,920	4,415	5,683	38,389	37,845	17,835	0.35
Paladin	Green	96	29,297	10,810	13,154	5,333	6,594	26,209	46,219	23,599	0.42
X3R Aladin	Yellow	96	29,087	10,294	14,830	3,963	5,010	27,405	36,758	18,053	0.37
X3R Camelot	Green	98	27,891	14,295	10,239	3,357	4,405	34,583	33,278	16,421	0.40
Yorktown	Green	98	25,213	9,578	11,049	4,586	5,018	24,686	41,325	19,466	0.39
Firenza	Jalapeno	96	23,170	22,138	1,032	.	.	.	.	.	.
Purple Beauty	Black	94	16,556	1,929	7,581	7,046	9,362	5,438	26,753	34,039	0.33
R^2			***0.38***	***0.77***							
CV			***26***	***36***							
lsd			***10,144***	***7,422***							

[1]Marketable yield and individual fruit weight were determined by combining the fancy and the US#1 grades.





North Mississippi Yellow Squash Trials

Kent Cushman and Thomas Horgan

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

Plant beds were formed six inches high and 30 inches across the top with a press-pan-type bed shaper. Methyl bromide fumigant was applied during bed formation at the rate of 350 pounds per acre. Preplant fertilizer was banded in both sides of the plant bed at the rate of six pounds of 9-13-24 (N-P_2O_5-K_2O) per 100 feet of row. White-on-black plastic mulch, white side up, and drip irrigation tubing was installed immediately after bed formation. Seeds were planted through the plastic on June 15 by hand. Plants were spaced 24 inches apart in plots 18 feet long and eight feet wide, making a total of 360 plants in this study (nine plants x ten cultivars x four replications).

Asana XL or Thiodan EC were mixed with Bravo WS and sprayed on a seven- to 10-day schedule with an airblast sprayer for insect and disease control. Water or fertilizer solution was applied through the drip tape on an as-needed basis. Fertilizer was applied by injecting a concentrated fertilizer solution (13.3 ounces of a high-grade soluble 20-20-20 fertilizer per gallon of water) at a 1:200 ratio for a final N concentration of 100 ppm in the irrigation water.

Harvest began July 13 and ended August 7 for a total of 12 harvests. Our picking schedule was Monday, Wednesday, and Friday and no days were missed throughout the harvest period. Fruit from each plot was separated by length into categories of small (4-5 inches), medium (5-6 inches), large (6-7 inches), and cull, and then counted and weighed. Small and medium fruit were considered US #1 and large fruit US #2 (Table 2). Plants damaged by wind early in the season were the major cause of plant loss.

Table 1. Seed Source of Selected Yellow Summer Squash Varieties

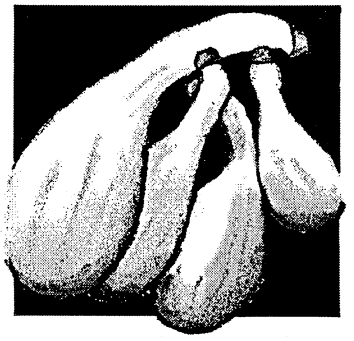
Entry	Seed source	Precocious[1]
Bandit	Abbott & Cobb	Y
Destiny III[2]	Asgrow	N
Dixie	Asgrow	N
Gentry	Novartis/Rogers	N
Goldie	Petoseed	N
Medallion	Abbott & Cobb	N
Prelude	Asgrow	N
Sundance	Wax	N
Supersett	Harris	Y
Suwannee	Sunseeds	N

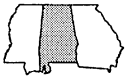
[1]Entries with the precocious trait have enhanced yellow color of the fruit and the stems attached to the fruit. This trait tends to mask symptoms when virus is present. Y = yes; N = no.
[2] Destiny III is a transgenic cultival having gene introduced to resistance to three common virus diseases.

TABLE 2. MARKETABLE YIELD OF SELECTED YELLOW SQUASH VARIETIES AT THE NORTH MISSISSIPPI RESEARCH AND EXTENSION CENTER

Entry	Total Yield[1]			Early Yield[2]		
	Total[3] lbs/a	US #1 lbs/a	Marketable[4] %	Avg. wt[5] oz	Total lbs/a	US #1 lbs/a
Medallion	14,050	10,350	86	2.8	4,100	2710
Supersett	13,270	9,800	92	2.6	4,960	3560
Sundance	12,610	9,180	78	2.6	5,030	3430
Goldie	12,460	9,010	83	2.6	4,620	3160
Prelude	12,430	9,010	84	2.7	3,630	2310
Destiny III	12,100	8,500	83	2.7	4,000	3040
Bandit	12,100	9,190	91	2.6	3,840	2900
Dixie	11,640	8,410	83	2.7	3,720	2590
Suwanne	11,600	8,540	87	2.6	3,830	2820
Gentry	11,250	8,540	86	2.7	3,530	2470
R^2			*0.68*			
CV			*5*			
lsd			*6*			

[1]Total yield of 12 harvests.
[2]Yield of first four harvests.
[3]US #1 and US #2.
[4]Relative number of marketable fruit as the percentage of total number harvested (marketable plus culls).
[5]Average fruit weight of US #1 squash. Average of 12 harvests.





'Gentry', 'Picasso', and 'Dixie' Lead in Summer Squash Variety Trial

Eric Simonne, Edgar Vinson, Randy Akridge, Jim Bannon, Jason Burkett, and Randall Rawls

Yellow (crookneck and straightneck) and zucchini (green and yellow) squash variety trials were conducted at the Brewton Experiment Field in Brewton (BEF), the Horticulture Unit at the E.V. Smith Research Center (EVSRC) near Shorter, and the Upper Coastal Plain Substation (UCPS) in Winfield (Tables 1 and 2).

At BEF and EVSRC, squash were direct seeded at a one-inch depth in single-row, five-foot wide and 20-foot long plots. In-row spacing was 18 inches, which provided a stand of approximately 6,000 plants per acre. At UCPS, double, staggered rows were planted six inches from the drip tape which resulted in a stand of approximately 12,000 plants per acre. Yields were corrected for stand. All trials were drip irrigated and the beds were covered with black-plastic mulch.

At BEF, beds were fumigated with 200 pounds per acre of methyl bromide on April 23. Preplant fertilization consisted of 500 pounds of per acre of 5-10-15 on April 23. Between May 9 and June 15 plants were fertilized alternatively with 20 pounds per acre of N as KNO_3 or $Ca(NO_3)_2$. Fungicides used were Bravo 720 (at a rate of two pints per acre) and Benlate 50 WP (at a rate of one pound per acre) on May 18, June 2, and June 15. Insect control consisted of applications of Lanate LV (at a rate of two pints per acre) on June 2 and 15.

At EVSRC, preplant fertilization consisted of 387 pounds of calcium nitrate on March 26 and injections alternatively of 9-0-0 (liquid calcium nitrate) and 20-20-20 twice per week at the rate of five pounds of N per injection beginning May 14 through July 23. Mannex fungicide was applied once weekly at a rate of 1.6 quarts per acre. Insect control was provided by applications of Asana (at a rate of 9.6 ounces per acre) on May 23 and June 23; and Thiodan (at a rate of 2.5 pints per acre) on June 2.

At UCPS, preplant fertilization consisted of 60 pounds of N per acre. Between May 12 and June 23, plants were fertilized alternatively with four pounds per acre of 20-20-20 and 0.5 pound of N per acre as potassium nitrate. Since there was no pest pressure, no fungicide or herbicides were necessary.

Table 1. Ratings of 1998 Squash Variety Trials[1]

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

[1]See introduction for a description of rating scales.

Frequent harvests are needed for summer squash to remain 'fairly young and fairly tender', which are necessary characteristics for squash to be graded as US#1. Hence, fruits were harvested six times between June 8 and June 19 at BEF, nine times between June 5 and 24 at EVSRC, and six times between June 10 and 22 at UCPS. Plants were still bearing marketable when all tests were ended. 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 3a,b,c) was evaluated by combining the yields of the first four harvests. Total production (Tables 4a,b,c) was also determined.

Because squash were planted early and only need approximately 50 days from seed to first harvest, squash tests did not suffer from the heat. Due to late arrivals in seeds, 'Dixie' was not included in the crookneck test at BEF. As in previous years, 'Gentry' and 'Picasso' had the highest early and total marketable yield. The transgenic variety 'Liberator III' was also among the top three varieties. Yields of 'Liberator II' and 'Prelude II' were significantly higher than those of 'Destiny III'. Virus pressure was low to non-existent in this test conducted in the early spring. Therefore, results reflect the actual horticultural potential of each variety. At UCPS where no virus were observed, 'Dixie' was the top performer.

Only our straightneck varieties were evaluated this year. While 'Sunbar' significantly out performed 'Lemondrop L'

for early and total yield, 'XPHT-1740' was the top yielder at UCPS. 'Seneca Supreme' had significantly lower early and total yields than 'XPHT-1740' and 'Lemondrop L'.

Yellow and medium-green zucchini varieties were evaluated. All entries showed good plant vigor. All the green entries were medium green, with the exception of 'ZS-7', 'XPHT-1784' and 'XPHT-1814' (medium-dark), and 'XPHT-1776' (medium-light).

At EVSRC, blossom-end rot (BER) was visible on fruits of 'Seneca Zucchini', 'RSQ-496', 'Caiman', and 'Spineless Beauty'. The variety the worst affected by BER was 'RSQ-494'. Since BER is a disorder directly related to calcium supply and indirectly related to water uptake, this observation reveals differences in these varieties for calcium uptake efficiency. None of the yellow zucchini were affected by BER.

'Golden Dawn II' was the top yielder in the yellow-zucchini group and had the most attractive fruits.

In the green group, 'Seneca Zucchini', 'ZS-7', 'RSQ-494', and the standard 'Spineless Beauty' had significantly higher early marketable yield, while 'RSQ-494, 'Sensation', 'Seneca Zucchini', and 'XPHT-1776' had significantly higher total marketable yield. Overall, the top yielders were 'RSQ-494' and 'Seneca Zucchini'.

No significant differences were observed between varieties at UCPS. 'Dividend' was the top early yielder and 'Caiman' had the highest total yield.

Based on all these results, recommendation or dispositions of experimentals were made (Table 5).

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	Novartis	45	—	94-98
Destiny III[3]	F1	Asgrow	—	CMV,WMV,ZYMV	97-98
Dixie	F1	Asgrow	41	—	94-96,98
Gentry	F1	Novartis	—	—	95-98
Goldie	F1	Petoseed	43	—	94-98
Horn of Plenty	F1	Hollar	—	—	98
Liberator III[3]	F1	Asgrow	42	CMV,WMV,ZYMV	97-98
Meigs[4]	F1	Asgow	41	—	96-98
Picasso	F1	Ferry-Morse	40	—	96-98
Prelude	F1	Asgrow	40	PM	97-98
Prelude II[3]	F1	Asgrow	40	PM,WMV,ZYMV	97-98
Sunbrite	F1	Novartis	43	—	95-98
Sundance	F1	Petoseed	45	—	94-98
Sunglo	F1	Novartis	—	—	98
			YELLOW STRAIGHTNECK		
Lemondrop L	F1	Asgrow	41	—	94-96,98
Seneca Supreme	F1	Solar Seed	52	CMV,WMV	97,98
Sunbar[4]	F1	Petoseed	43	—	94,96-98
XPHT 1740	F1	Asgrow	—	—	98
			ZUCCHINI SQUASH		
ACX-27 (Yellow)	F1	Abbott and Cobb	—	—	98
Caiman	F1	Shamrock	—	—	98
Dividend	F1	Novartis	—	—	98
Golden Dawn III (Yel.)	F1	Novartis	—	—	98
Gold Rush (Yellow)	F1	Stokes	52	—	96-98
Revenue	F1	Novartis	—	—	98
RSQ-494	F1	Novartis	—	—	98
RSQ-496	F1	Novartis	—	—	98

. = not available; -- = none; from seed catalogs

[1]Type: F1 = Hybrid

[2]Disease claims: PM = Powdery Mildew; DM = Downy Mildew; ZYMV = Zucchini Yellow Mosaic Virus; WMV = Watermelon Mosaic Virus

[3]Transgenic Variety; [4]Yellow-Precocious-Gene Carrying Variety;

TABLE 2, CONTINUED. SEED SOURCE, FRUIT TYPE, AND RELATIVE EARLINESS OF SELECTED SQUASH VARIETIES

Variety	Type[1]	Seed source	Days to harvest	Disease claims[2]	Years evaluated
		ZUCCHINI SQUASH, continued			
Senator	F1	Asgrow	41	—	94-98
Seneca Zucchini	F1	Seneca Hybrids	42	—	97,98
Sensation	F1	Asgrow	40	—	96-98
Spineless Beauty	F1	Novartis	43	—	94-98
ZS-7	F1	Novartis	—	—	98
XPHT 1776	F1	Asgrow	—	—	98
XPHT 1784	F1	Asgrow	—	—	98
XPHT 1814	F1	Asgrow	—	—	98

. = not available; -- = none; from seed catalogs
[1]Type: F1 = Hybrid
[2]Disease claims: PM = Powdery Mildew; DM = Downy Mildew; ZYMV = Zucchini Yellow Mosaic Virus; WMV = Watermelon Mosaic Virus
[3]Transgenic Variety; [4]Yellow-Precocious-Gene Carrying Variety;

TABLE 3A. EARLY PRODUCTION[1] AND GRADE DISTRIBUTION OF SELECTED YELLOW CROOKNECK SUMMER SQUASH VARIETIES

Variety	Type	Percent stand	Early marketable wt. lbs/a	Early US#1 wt. lbs/a	Early US#2 wt. lbs/a	Early US#1 no. #/a	Early US#2 no. #/a
			BREWTON EXPERIMENT FIELD				
Gentry	YCN	100	7,569	7,569	0	25,047	0
Picasso	YCN	100	7,084	7,084	0	21,671	0
Liberator III	YCN	100	6,839	6,839	0	19,166	0
Crescent	YCN	100	6,654	6,654	0	23,414	0
Sunglo	YCN	100	6,420	6,420	0	20,147	0
Prelude II	YCN	100	6,245	6,245	0	19,493	0
Horn of Plenty	YCN	100	6,229	6,229	0	21,018	0
Prelude	YCN	100	6,196	6,196	0	20,364	0
Destiny III	YCN	100	5,211	5,211	0	17,751	0
Goldie	YCN	100	4,939	4,939	0	16,553	0
Meigs	YCN	100	4,590	4,590	0	17,860	0
Sundance	YCN	100	4,568	4,568	0	14,919	0
Sunbrite	YCN	100	4,367	4,367	0	14,048	0
R^2			***0.76***	***0.76***			
CV			***17***	***17***			
lsd			***1,371***	***1,371***			
			UPPER COASTAL PLAIN SUBSTATION				
Dixie	YCN	94	19,443	4,653	14,790	9,039	20,255
Sunbrite	YCN	78	8,776	1,985	6,791	6,861	17,860
Sunglo	YCN	80	8,279	2,607	5,672	13,286	19,166
R^2			***0.38***	***0.21***			
CV			***45***	***98***			
lsd			***7,830***	***3,936***			

[1]Cumulative productions of the first four harvests at all locations.

TABLE 3B. EARLY PRODUCTION[1] AND GRADE DISTRIBUTION OF SELECTED STRAIGHTNECK SQUASH VARIETIES

Variety	Type	Percent stand	Early marketable wt. lbs/a	Early US#1 wt. lbs/a	Early US#2 wt. lbs/a	Early US#1 no. #/a	Early US#2 no. #/a
BREWTON EXPERIMENT FIELD							
Sunbar	YSN	100	6,774	6,774	0	23,087	0
Lemondrop L.	YSN	100	1,421	1,421	0	3,485	0
R^2			*0.76*	*0.76*			
CV			*17*	*17*			
lsd			*1,371*	*1,371*			
UPPER COASTAL PLAIN SUBSTATION							
XPHT-1740	YSN	90	18,070	3,842	14,228	7,841	18,295
Lemondrop L	YSN	83	10,769	710	10,059	3,703	18,186
Seneca Supreme	YSN	96	9,052	2,351	6,701	8,821	13,613
R^2			*0.38*	*0.21*			
CV			*45*	*98*			
lsd			*7,830*	*3,936*			

[1]Cumulative productions of the first four harvests at all locations.

TABLE 3C. EARLY PRODUCTION[1] AND GRADE DISTRIBUTION OF SELECTED ZUCCHINI SQUASH VARIETIES

Variety	Type	Percent stand	Early marketable wt. lbs/a	Early US#1 wt. lbs/a	Early US#2 wt. lbs/a	Early US#1 no. #/a	Early US#2 no. #/a
E.V. SMITH RESEARCH CENTER							
Golden Dawn III	YZ	98	3,624	3,624	0	17,489	0
Gold Rush	YZ	97	3,602	3,602	0	17,250	0
ACX-27	YZ	95	2,942	2,942	0	15,333	0
Seneca Zucchini	Z	100	7,125	7,125	0	29,468	0
ZS-7	Z	93	6,702	6,702	0	26,114	0
RSQ 496	Z	93	6,654	6,654	0	30,427	0
Spineless Beauty	Z	98	6,366	6,366	0	27,312	0
RSQ 494	Z	92	6,157	6,157	0	25,875	0
Caiman	Z	73	6,083	6,083	0	24,677	0
Sensation	Z	87	5,652	5,652	0	22,281	0
Revenue	Z	97	5,405	5,405	0	23,239	0
XPHT-1776	Z	97	5,382	5,382	0	21,562	0
Senator	Z	88	5,228	5,228	0	20,843	0
XPHT-1814	Z	97	4,424	4,424	0	20,843	0
Dividend	Z	82	3,644	3,644	0	15,094	0
XPHT-1784	Z	95	2,512	2,512	0	9,823	0
R^2			*0.56*	*0.56*			
CV			*38*	*38*			
lsd			*872*	*872*			
UPPER COASTAL PLAIN SUBSTATION							
Dividend	Z	89	14,691	1,978	12,714	4,029	14,266
Caiman	Z	86	13,993	1,959	12,033	6,244	18,295
Senator	Z	94	13,567	2,738	10,829	8,276	14,266
Revenue	Z	89	9,873	1,754	8,119	4,792	16,008
R^2			*0.38*	*0.21*			
CV			*45*	*98*			
lsd			*7,830*	*3,936*			

[1]Cumulative productions of the first four harvests at all locations.

TABLE 4A. TOTAL PRODUCTION[1] AND GRADE DISTRIBUTION OF SELECTED YELLOW CROOKNECK SQUASH VARIETIES

Variety	Type	Percent stand	Total marketable wt. lbs/a	Total US#1 wt. lbs/a	Total US#2 wt. lbs/a	Total cull lbs/a	Total US#1 no. #/a	Total US#2 no. #/a	Individual fruit wt. lb
BREWTON EXPERIMENT FIELD									
Gentry	YCN	100	8,462	8,462	0	1,296	29,403	0	0.29
Liberator III	YCN	100	8,064	8,064	0	1,508	22,760	0	0.36
Picasso	YCN	100	7,912	7,912	0	1,465	24,720	0	0.32
Prelude II	YCN	100	7,520	7,520	0	1,590	23,087	0	0.33
Sunglo	YCN	100	7,367	7,367	0	1,492	23,305	0	0.32
Crescent	YCN	100	7,258	7,258	0	893	26,463	0	0.28
Prelude	YCN	100	7,068	7,068	0	1,617	23,305	0	0.31
Horn of Plenty	YCN	100	7,008	7,008	0	2,712	23,958	0	0.29
Destiny III	YCN	100	5,881	5,881	0	1,949	20,147	0	0.29
Goldie	YCN	100	5,728	5,728	0	2,053	19,820	0	0.29
Sunbrite	YCN	100	5,630	5,630	0	2,603	18,622	0	0.31
Meigs	YCN	100	5,385	5,385	0	1,715	21,236	0	0.25
Sundance	YCN	100	5,097	5,097	0	1,873	16,662	0	0.32
R^2			*0.76*	*0.76*					
CV			*15*	*15*					
lsd			*1,417*	*1,417*					
UPPER COASTAL PLAIN SUBSTATION									
Dixie	YCN	94	24,568	5,860	18,708	5,602	11,543	25,592	0.55
Sunglo	YCN	80	17,220	4,439	12,781	5,502	19,058	31,037	0.26
Sunbrite	YCN	78	15,072	3,316	11,756	5,803	10,781	27,770	0.35
R^2			*0.33*	*0.24*					
CV			*32*	*76*					
lsd			*8,396*	*3,480*					

[1]Cumulative productions of the six harvests at BEF, nine at EVSRC, and six at UCPS.

TABLE 4B. TOTAL PRODUCTION[1] AND GRADE DISTRIBUTION OF SELECTED YELLOW STRIAGHTNECK SQUASH VARIETIES

Variety	Type	Percent stand	Total marketable wt. lbs/a	Total US#1 wt. lbs/a	Total US#2 wt. lbs/a	Total cull lbs/a	Total US#1 no. #/a	Total US#2 no. #/a	Individual fruit wt. lb
BREWTON EXPERIMENT FIELD									
Sunbar	YSN	100	7,029	7,029	0	1,378	24,067	0	0.29
Lemondrop L.	YSN	100	2,173	2,173	0	506	5,881	0	0.36
R^2			*0.76*	*0.76*					
CV			*15*	*15*					
lsd			*1,417*	*1,417*					
UPPER COASTAL PLAIN SUBSTATION									
XPHT-1740	YSN	90	21,691	5,376	16,315	6,655	12,197	20,691	0.44
Lemondrop L	YSN	83	15,150	1,454	13,696	8,160	5,990	24,285	0.24
Seneca Supreme	YSN	96	12,915	2,788	10,127	5,334	10,346	17,424	0.27
R^2			*0.33*	*0.24*					
CV			*32*	*76*					
lsd			*8,396*	*3,480*					

[1]Cumulative productions of the six harvests at BEF, nine at EVSRC, and six at UCPS.

TABLE 4C. TOTAL PRODUCTION[1] AND GRADE DISTRIBUTION OF SELECTED ZUCCHINI SQUASH VARIETIES

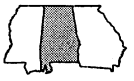
Variety	Type	Percent stand	Total marketable wt. lbs/a	Total US#1 wt. lbs/a	Total US#2 wt. lbs/a	Total cull lbs/a	Total US#1 no. #/a	Total US#2 no. #/a	Individual fruit wt lb
E.V. SMITH RESEARCH CENTER									
Golden Dawn III	YZ	98	10,216	10,216	0	6,165	40,489	0	0.25
Gold Rush	YZ	97	8,734	8,734	0	6,605	37,374	0	0.24
ACX-27	YZ	95	7,281	7,281	0	12,893	39,531	0	0.19
RSQ 494	Z	92	13,994	13,994	0	5,576	47,916	0	0.64
RSQ 496	Z	93	13,384	13,384	0	4,613	51,510	0	0.57
Sensation	Z	87	13,081	13,081	0	7,307	40,968	0	0.31
Seneca Zucchini	Z	100	12,742	12,742	0	8,646	42,885	0	0.30
XPHT-1776	Z	97	12,485	12,485	0	9,030	41,927	0	0.30
Spineless Beauty	Z	98	11,738	11,738	0	7,076	39,770	0	0.30
ZS-7	Z	93	11,349	11,349	0	7,530	39,531	0	0.30
Revenue	Z	97	11,254	11,254	0	2,053	42,406	0	0.27
Caiman	Z	73	11,146	11,146	0	5,207	36,895	0	0.27
XPHT-1814	Z	97	11,082	11,082	0	7,875	41,687	0	0.27
Dividend	Z	82	10,633	10,633	0	2,748	39,531	0	0.27
XPHT-1784	Z	95	10,588	10,588	0	7,823	34,979	0	0.30
Senator	Z	88	9,728	9,728	0	6,138	29,948	0	0.34
R^2			***0.57***	***0.57***					
CV			***29***	***29***					
lsd			***2,136***	***2,136***					
UPPER COASTAL PLAIN SUBSTATION									
Caiman	Z	86	22,015	4,705	17,310	5,123	11,326	26,717	0.41
Senator	Z	94	19,386	3,156	16,230	5,519	8,712	20,691	0.36
Dividend	Z	89	19,195	3,084	16,112	8,263	6,534	18,840	0.47
Revenue	Z	89	16,166	2,220	13,945	9,293	5,881	23,740	0.38
R^2			***0.33***	***0.24***					
CV			***32***	***76***					
lsd			***8,396***	***3,480***					

[1]Cumulative productions of the six harvests at BEF, nine at EVSRC, and six at UCPS.

TABLE 5. RECOMMENDATION FOR DISPOSITION OF SUMMER SQUASH EXPERIMENTALS[1]

Experimental (Source)	Type	Disposition	Comment
ACX-27 (A&C)	Yellow	Drop	Insufficient yield
RSQ-494 (Novartis)	Medium green	Drop	
RSQ-496 (Novartis)	Medium green	Re-evaluate	Good yield; sensitive to blossom-end rot
ZS-7 (Novartis)	Medium-dark green	Keep	Good early yield
XPHT-1776 (Asgrow)	Medium-light green	Re-evaluate	
XPHT-1784 (Asgrow)	Medium-dark green	Drop	Insufficient yield
XPHT-1814 (Asgrow)	Medium-dark green	Drop	Insufficient yield

[1]Based only on 1998 trials



Will 'Athena' be Challenged by 'EXH-6332' on the Eastern-Type Cantaloupe Market?

Eric Simonne, Edgar Vinson, Jim Bannon, Robert Boozer, Jason Burkett, Tony Dawkins, Nadia Ouakrim, Jim Pitts, and Marvin Ruf

Small melon (cantaloupe, honey dew, and specialty melons) variety trials were conducted at the E.V. Smith Research Center (EVSRC) near Shorter, the Chilton Area Horticulture Substation (CAHS) in Clanton, and the Sand Mountain Substation (SMS) in Crossville (Tables 1 and 2). Selected varieties of small melons were direct seeded in single rows on four-foot-wide and 30-foot long beds, at a three foot within-row spacing. Seed dates were May 4 at EVSRC, June 2 at CAHS, and May 13 at SMS. At all locations, white plastic mulch and drip irrigation were used.

At EVSRC, preplant fertilizer was broadcast applied on April 9 and provided (per acre) 50 pounds of N and phosphorus (P_2O_5), and 100 pounds of potassium (K_2O) as 10-10-20. On April 10, beds were fumigated with methyl bromide at a rate of 400 pounds per acre. Between May 16 and August 1, six pounds of N were injected weekly, alternatively from 20-20-20, $Ca(NO_3)_2$ and KNO_3. A total of 72 pounds of N was injected.

Preplant herbicide was Sonalan (at a rate of 4.5 pints per acre) applied on April 16. Insect control was provided by applications of Thiodan 3EC (at a rate of 1.5 pints per acre) on June 5, June 19, and July 5; and Asana XL (at a rate of eight ounces per acre) on June 26. Fungicides used were Dithane DF (at a rate of two pounds per acre) on May 25 and June 19; Kocide (at a rate of three pounds per acre) on June 1, June 5, June 10, June 26, and July 5; Manzate 200 DF (at a rate of three pounds per acre) on June 5 and 26; and Manex (at a rate of 1.5 quarts per acre) on June 10. Plants were also sprayed with Guthion 35W (at a rate of two pounds per acre) on May 25.

At CAHS, beds were fumigated with 200 pounds of Methyl Bromide per acre. Preplant fertilization consisted of a broadcast application of 60-0-60 on May 20. Fertilization consisted of weekly, alternating injections of 20-20-20 and potassium nitrate beginning June 18 and ending September 9, 1998. Pest control was provided by Thiodan (at a rate of 1.5 pounds per acre) on June 15; Imidan (at a rate of 1.5 pounds per acre) on June 9, July 24 and August 12; and Lannate (at the rate of one quart per acre) on July 16. Fungicides used were Dithane (at the rate of two pounds per acre) on June 15 and July 24; Kocide 101 (at a rate of two pounds per acre) on June 15, July 9, July 16, July 24, and August 12; Manzate (at a rate of two pounds per acre) on July 9 and August 12; Mannex (at the rate of one quart per acre) on July 16; and Bravo (at a rate of 1.5 quarts per acre) on September 1. Herbicide used was Poast and Crop Oil (each at a rate of one quart per acre) on July 16.

Table 1. Ratings of 1998 Small Melon Variety Trials[1]

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

[1]See introduction for a description of rating scales.

At SMS, fertilization consisted of preplant applications on April 6 of concentrated superphosphate (at a rate of 100 pounds per acre); muriate of potash (KCl, at a rate of 120 pounds per acre) and ammonium nitrate (NH4NO3, at a rate of 150 pounds per acre). Between June 8 and July 13, potassium nitrate (at a rate of 50 pounds per acre) and 20-20-20 (at a rate of 30 pounds per acre) were alternatively injected weekly. Bravo fungicide (at a rate of one pint per acre) and Sevin XLR insecticide (at a rate of 1.5 pints per acre) were applied on June 9, June 22, June 29, and July 16. Ridomil fungicide was applied on June 16 at a rate of one pint per acre.

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-ripped 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 become sweeter during storage. Hence, sugar content at harvest is not a good indicator of sweetness at maturity.

Melons were harvested and graded on July 3, 11, and 18 at CAHS, July 8, July 11, July 15, July 16, July 19, July 22, July 25, July 29 and August 1 at EVRSC , and on July 12, July 16, July 19, July 22, July 24, July 26, July 29, July 31, August 2, and August 6 at SMS (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.

The list of entries was similar at all three locations. In the Eastern-type cantaloupe group, differences in yields did not tend to be significant. Yet the experimental 'EXH-6332' out performed the standard 'Athena' at all three locations. In the Western-type cantaloupe group, differences among varieties were not significant. The standard 'Mission' and 'Otero' were top yielders at EVSRC and CAHS, while 'Laredo' and 'Hi-Mark' were top yielders at SMS. The experimental 'AC-82-37-RNL' showed acceptable yield and good fruit quality, but as observed in the past tended to be late. This AU experimental could be released for the home-garden market. The fruits of 'AC-75-1-A' were very uniform, but consistently too small. This other AU experimental could be best used if crossed with a large fruited parent in breeding a hybrid line with uniform, quality melons.

Comparisons among honey dew entries are difficult because the standard 'Early Dew' has a typical green flesh, while 'Honey Orange' has an orange flesh. The flesh color of 'Tesoro Dulce' is rather typical, but its yellow skin, and pear-like texture and flavor are not. All three could be acceptable as specialty melons.

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

Variety	Type	Seed source	Rind aspect[1]	Flesh color	Days to harvest	Disease claims[2]	Years evaluated
			Cantaloupe (Muskmelon)				
AC-75-1-A	OP	Auburn U.	W	O	—	—	98
AC-82-37-RNL	OP	Auburn U.	W	O	—	—	98
Athena	F1	Novartis	E	O	80	FW, PM	94-98
Banana Sweet	—	Kelly	Spe	Y	—	—	98
Butterscotch Sweetie No.6	F1	Johnny's	Spe	O-Gr	75	FW 1&2, PM,DM	98
Cordele	F1	Asgrow	E	O	85	FW, PM	94-98
Cristobal	F1	Asgrow	W	O	—	FW, PM	98
Durango	F1	Petoseed	W	O	83	FW, PM, Su	96-98
Earli-Dew	F1	Petoseed	HD	Gr	80	FW	95-98
Eclipse	F1	Petoseed	E	O	85	FW, PM	96-98
EXH-6332	F1	Asgrow	E	O	—	—	98
Honey Orange	F1	Johnny's	HD	O	80	—	98
Hy-Mark	F1	Petoseed	W	O	83	PM ,Su	94-98
Laredo	F1	Petoseed	W	O	82	PM, Su	96-98
Mission	F1	Asgrow	W	O	80	PM, Su	94-98
Otero	F1	Hollar	W	O	—	—	97-98
Passport[3]	F1	Stokes	Spe	Gr	75	ANT, GSB	96-98
Tesoro Dulce	F1	Asgrow	HD	Gr	—	—	98
Rocky Ford Green	F1	Kelly	Spe	Gr	—	—	98

— = not found; from seed catalogues

[1]Rind Aspect: Sm = Smooth; N = Netted ; Su = Sutured; Flesh Color: O = Orange; Gr = Green; Y = Yellow

[2]Disease Claims: FW = Fusarium Wilt; PM = Powdery Mildew; ANT = Anthracnose; DM = Downy Mildew; Su = Sulfur

[3]Honey Dew x Galia cross

TABLE 3. YIELD OF SELECTED SMALL MELON VARIETIES

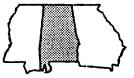
Variety	Type	Marketable yield lbs/a	Marketable fruits #/a	Individual fruit wt. lb	Soluble solids °Brix	Cull wt. lbs/a	Culled fruits #/a
			E.V. SMITH RESEARCH CENTER				
EXH-6332	Eastern	34,768	6,670	5.2	8.4	4,075	.
Eclipse	Eastern	31,381	6,380	5.2	8.2	3,005	.
Athena	Eastern	28,755	6,380	4.5	8.4	4,793	.
Cordele	Eastern	26,772	6,018	4.2	7.9	2,465	.
Cristobal	Eastern	24,431	6,525	3.5	9.2	609	.
Honey Orange	Honey Dew	32,700	7,178	4.4	11.1	1,744	.
Tesoro Dulce	Honey Dew	31,515	5,655	5.7	11.1	1,360	.
Earli-Dew	Honey Dew	16,415	3,988	4.1	9.4	15,482	.
Passport	Specialty	36,754	9,933	3.7	9.5	6,928	.
Butterscotch	Specialty	7,856	4,350	1.8	11.3	2,751	.
Mission	Western	33,876	8,990	3.6	9.9	2,590	.
Otero	Western	28,292	7,613	3.8	9.5	1,234	.
AC-82-37-RNL	Western	27,696	10,440	2.7	7.8	1,425	.
Hi-Mark	Western	25,648	5,873	4.4	9.9	665	.
Laredo	Western	21,722	6,743	3.1	8.7	1,485	.
Durango	Western	19,679	5,510	2.8	9.0	606	.
AC-75-1-A	Western	12,764	5,719	2.2	8.5	738	.
R^2		***0.21***	***0.19***	***0.64***			
CV		***67***	***60***	***23***			
lsd		***24,600***	***5,696***	***1.2***			
			CHILTON AREA HORTICULTURE SUBSTATION				
EXH-6332	Eastern	17,490	6,090	3.0	9.1	.	.
Athena	Eastern	16,120	6,815	2.4	11.1	.	.
Cordele	Eastern	15,034	5,583	2.7	10.0	.	.
Eclipse	Eastern	14,739	5,583	2.6	10.4	.	.
Tesoro Dulce	Honey Dew	16,367	6,453	2.6	11.2	.	.
Earli-Dew	Honey Dew	12,427	5,873	2.1	12.0	.	.
Banana Sweet	Specialty	9,102	3,480	2.6	10.6	.	.
Passport	Specialty	5,085	2,538	2.1	11.1	.	.
Rocky Ford Green	Specialty	3,434	3,408	1.0	11.0	.	.
Otero	Western	12,210	7,178	1.7	11.5	.	.
Mission	Western	12,197	7,758	1.6	12.1	.	.
Durango	Western	11,036	5,510	2.1	10.8	.	.
Cristobal	Western	9,694	6,380	1.5	11.5	.	.
Hi-Mark	Western	9,382	5,728	1.6	11.7	.	.
AC-82-37-RNL	Western	8,875	6,888	1.3	11.5	.	.
AC-75-1-A	Western	8,456	6,525	1.3	11.1	.	.
Laredo	Western	8,274	5,800	1.4	11.1	.	.
R^2		***0.64***	***0.48***	***0.82***			
CV		***30***	***29***	***16***			
lsd		***4,710***	***2,332***	***0.5***			

. = not available

TABLE 3, CONTINUED. YIELD OF SELECTED SMALL MELON VARIETIES

Variety	Type	Marketable yield lbs/a	Marketable fruits #/a	Individual fruit wt. lb	Soluble solids °Brix	Cull wt. lbs/a	Culled fruits #/a
			SAND MOUNTAIN SUBSTATION				
EXH-6332	Eastern	43,232	5,293	8.2	9.5	.	.
Eclipse	Eastern	39,433	5,438	7.2	9.5	.	.
Cordele	Eastern	35,960	5,655	6.4	8.7	.	.
Athena	Eastern	33,009	5,728	5.8	10.6	.	.
Tesoro Dulce	Honey Dew	25,411	3,553	7.1	8.4	.	.
Earli-Dew	Honey Dew	16,958	3,843	4.3	9.9	.	.
Banana Sweet	Specialty	29,950	5,510	5.4	7.7	.	.
Passport	Specialty	26,876	6,598	3.9	9.4	.	.
Rocky Ford Green	Specialty	22,997	11,020	2.1	9.5	.	.
Laredo	Western	29,435	7,250	4.1	9.3	.	.
Hi-Mark	Western	29,131	7,758	3.8	10.6	.	.
AC-82-37-RNL	Western	27,992	9,788	2.8	10.4	.	.
Cristobal	Western	27,057	7,250	3.7	8.3	.	.
Mission	Western	26,680	7,250	3.7	12.8	.	.
Durango	Western	26,528	6,090	4.3	9.2	.	.
AC-75-1-A	Western	26,216	9,135	2.9	8.1	.	.
Otero	Western	25,933	6,308	4.1	9.8	.	.
R^2		***0.49***	***0.63***	***0.91***			
CV		***24***	***25***	***13***			
lsd		***10,005***	***2,395***	***0.9***			

. = not available



'Bronco' Out-Performed by Several Green Bean Varieties

Eric Simonne, Edgar Vinson, Bobby Boozer, Tony Dawkins, Jim Pitts, and Marvin Ruf

Green bean variety trials were conducted at the Chilton Area Horticulture Substation (CAHS) in Clanton and the Sand Mountain Substation (SMS) in Crossville (Tables 1 and 2).

At both locations, beans were direct seeded on bare ground into 20-foot long, two-row plots at a within row spacing of one foot. Planting dates were May 27 at CAHS and May 15 at SMS.

At SMS, preplant fertilization consisted of concentrated superphosphate (at a rate of 300 pounds per acre); muriate of potash (KCl, at a rate of 60 pounds per acre) and ammonium nitrate (NH4NO3, at a rate of 210 pounds per acre) applied on May 14. Green beans were sidedressed with calcium nitrate [$Ca(NO_3)_2$], at a rate of 100 pounds per acre) on June 8 and 22. Weeds were controlled by one application of Dual herbicide (at a rate of 1.5 pounds per acre) on May 15. Fungicide used was Ridomil (at a rate of 1.5 pounds per acre) on June 16 and 22. Sevin XL insecticide was applied on June 17, June 22, and July 1 at a rate of 0.5 pound per acre.

Green beans were hand harvested on July 16, 18, and 28 at CAHS, and July 7, July 14, July 21, and August 8 at SMS. Marketable yield, and weight and length of 50 pods were determined (Table 3).

Table 1. Ratings of 1998 Green Bean Variety Trials[1]

Location	CAHS	SMS
Weather	5	5
Fertility	5	5
Irrigation	5	5
Pests	5	5
Overall	5	5

[1]See introduction for a description of rating scales.

Yield range was similar at both locations. At CAHS, 'Italian Flat', and the experimentals 'MB-8807' and 'QG-7705' had significantly higher marketable yields than the standard 'Bronco'.

At SMS, virus pressure was moderate and was likely to affect yield. Under these conditions, 'Hialeha', 'XPB-378', and 'Stallion' had significantly higher marketable and total yields. The standard 'Bronco' was significantly outperformed by the above-mentioned top three varieties and by all the experimentals ('XPB-393', 'SSC-1204', 'SB-4136', 'MB-8007', and 'XPB-394').

Overall, 'Stallion', 'SSC-1204', and 'XPB-378' had the most consistent performances.

Table 2. Seed Source and Characteristics 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	Novartis	55	Bush	Lt. Green	Round	CBMV,NY15MV	97,98
Bronco	OP	Asgrow	53	Bush	Green	Round	CBMV	97,98
Carlo	OP	Asgrow	55	Bush	Green	Round	CBMV	97,98
Cloudburst	OP	Asgrow	.	Bush	Lt. Green	Round	—	98
Hialeah	OP	Ferry-Morse	53	Bush	Lt. Green	Oval	NY15MV	97
Hirada	OP	Novartis	.	Bush	Lt. Green	Round	—	98
Italian Flat	OP	Johnny's	.	Bush	Green	Flat	—	98
La France	OP	Burpee	.	Bush	Green	Round	—	98

. = not available; — = none; from seed catalogues. [1]Disease Claims:Bacterial Blight=BB; BS=Brown Spot; CBMV=Common Bean Mosaic Virus; NY15MV=NY15 Mosaic Virus; Halo Blight=HB; RB=Bean Rust; PM=Powdery Mildew

TABLE 2, CONTINUED. SEED SOURCE AND CHARACTERISTICS OF SELECTED GREEN BEAN VARIETIES

Variety	Type	Seed source	Days to harvest	Growth habit	Pod color	Pod shape	Disease claims[1]	Years evaluated
MB-8007	OP	Novartis	—	Bush	Lt. Green	Round	—	98
Nickel	OP	Vilmorin	52	Bush	Green	Round	BS,WM	97,98
Narbonne	OP	Johnny's	52	Bush	Green	Round	BB,HB	98
QG-7705	OP	Novartis	—	Bush	Lt. Green	Round	—	98
Seville	OP	SeedWay	56	Bush	Lt. Green	Round	CBMV,NY15MV	97,98
Sonata	OP	Ferry-Morse	—	Bush	Green	Round	—	97,98
SSC-1204	OP	Shamrock	—	Bush	Lt. Green	Round	—	98
Stallion	OP	Asgrow	—	Bush	Lt. Green	Round	—	98
Storm	OP	Asgrow	—	Bush	Lt. Green	Round	—	98
Strike	OP	Kelly	55	Bush	Lt. Green	Round	CBMV	98
Xera	OP	Johnny's	53	Bush	Green	Round	CBMV,HB	98
XPB-378	OP	Asgrow	—	Bush	Lt. Green	Round	—	98
XPB-393	OP	Asgrow	—	Bush	Lt. Green	Round	—	98
XPB-394	OP	Asgrow	—	Bush	Green	Round	—	98

[1]Disease Claims:Bacterial Blight=BB; BS=Brown Spot; CBMV=Common Bean Mosaic Virus; NY15MV=NY15 Mosaic Virus; Halo Blight=HB; RB=Bean Rust; PM=Powdery Mildew

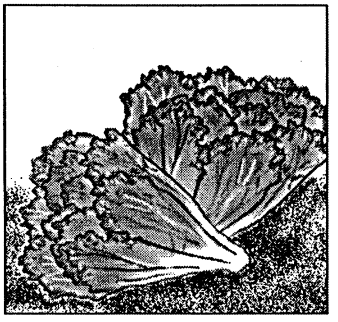
TABLE 3. YIELD AND POD CHARACTERISTICS OF SELECTED GREEN BEAN VARIETIES

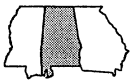
Variety	Percent plant stand	Percent diseased plants	Marketable yield lbs/a	Cull weight lbs/a	Pod weight. lbs/100 pods	Pod length in/pod
CHILTON AREA HORTICULTURE SUBSTATION						
Italian Flat	.	.	3,954	.	0.80	2.7
MB-8007	.	.	2,523	.	0.73	2.6
QG-7705	.	.	2,511	.	0.64	2.4
Storm	.	.	2,240	.	0.66	2.5
SSC-1204	.	.	2,108	.	0.73	2.9
Strike	.	.	2,053	.	0.48	2.5
Stallion	.	.	1,981	.	0.62	2.5
XPB-378	.	.	1,790	.	0.63	2.4
Hialeha	.	.	1,650	.	0.52	2.6
Hirada	.	.	1,535	.	0.52	2.6
Benchmark	.	.	1,491	.	0.51	2.9
Bronco	.	.	1,443	.	0.65	2.3
La France	.	.	1,401	.	0.20	.
Cloudburst	.	.	1,367	.	0.56	2.4
Seville	.	.	1,232	.	0.56	2.5
Narbonne	.	.	901	.	0.55	2.2
Xera	.	.	853	.	0.39	.
XPB-393	.	.	777	.	0.61	2.5
XPB-394	.	.	658	.	0.62	2.6
Carlo	.	.	458	.	0.72	.
R^2			***0.42***		***0.59***	***0.82***
CV			***64***		***23***	***4***
lsd			***1,594***		***0.19***	***0.2***

. = not available

TABLE 3, CONTINUED. YIELD AND POD CHARACTERISTICS OF SELECTED GREEN BEAN VARIETIES

Variety	Percent plant stand	Percent diseased plants	Marketable yield lbs/a	Cull weight lbs/a	Pod weight. lbs/100 pods	Pod length in/pod
			SAND MOUNTAIN SUBSTATION			
Hialeha	99	11	3,505	230	1.19	1.9
XPB-378	93	18	3,368	803	1.30	2.0
Stallion	93	28	3,141	700	1.38	2.2
Storm	93	15	2,843	217	1.08	1.7
Italian Flat	84	38	2,797	116	2.46	3.9
XPB-393	89	20	2,683	545	1.25	2.0
SSC-1204	104	24	1,823	426	1.52	2.4
SB-4136	99	46	1,799	213	1.15	1.8
MB-8007	95	25	1,601	268	1.56	2.5
XPB-394	92	16	1,334	167	0.99	1.6
Cloudburst	98	26	1,284	382	1.19	1.9
Benchmark	87	34	1,191	282	1.28	2.0
Mirada	93	41	819	253	1.02	1.6
Bronco	83	41	747	86	0.78	1.2
Seville	98	18	525	39	1.15	1.8
Narbonne	101	13	509	245	1.14	1.8
Strike	89	34	484	252	1.04	1.6
Xera	86	46	474	684	0.83	1.3
La France	93	27	354	757	0.67	1.1
Carlo	71	11	280	148	0.88	1.4
Nickel	33	18	0	241	0.68	1.1
R^2	***0.65***	***0.29***	***0.79***	***0.59***	***0.86***	***0.44***
CV	***11***	***78***	***41***	***63***	***15***	***12***
lsd			***556***	***305***	***0.06***	***0.8***





Lettuce Varieties Suffer from Heat

Eric Simonne, Edgar Vinson and Brian Gamble, and Larry Wells

A lettuce variety trial was conducted at the Wiregrass Substation (WS) in Headland. Lettuce was grown on white-plastic mulch and drip irrigation. Six-week-old lettuce were transplanted in staggered, double rows 12 inches apart at an in-row spacing of 12 inches. Plots were 25-feet long and contained 50 plants. This created a stand of approximately 21,800 plants per acre.

Preplant fertilization consisted (per acre) of one ton of lime on March 25, one ton per acre of chicken litter on March 30, 60 pounds per acre of phosphorous (P_2O_5), and 60 pounds per acre of potassium (K_2O). Weekly injections at a rate of six pounds of N per acre were made weekly from transplanting to harvest. Plants were sprayed with Bravo fungicide (at a rate of three pints per acre) on May 28.

Lettuce were harvested on June 6 at marketable size and graded according to the *U.S. Standards for Grades of Romaine* (U.S. Dept. of Agriculture Publication 60-6130). Heads were culled because of bolting or insufficient head size (Table 3).

Table 1. Ratings of 1998 Letteuce Variety Trial[1]

Location	WS
Weather	3
Fertility	5
Irrigation	5
Pests	5
Overall	4

[1]See introduction for a description of rating scales.

Along with bell peppers, lettuce was the crop the most adversely affected by heat. Consequently, most varieties were bitter five days before harvest and all were at harvest. Only 'Target' and 'Green Vision' showed symptoms of tip-burn. Under these conditions, 'Target' (tip-burn); 'Jen-1197', 'Taglio', and 'Tango' (high fiber); and 'Greengo' (bitter) were the least acceptable. The varieties 'Red Fox'(red looseleaf), 'Mikola' (red Romaine), and 'Ermosa' (green butterhead) were the most acceptable.

Table 2. Seed Source, Earliness, and Disease Claims of Selected Letteuce Varieties

Variety	Head type	Seed source	Days to harvest	Leaf color	Disease claims[1]	Years evaluated
Corsair	Romaine	Johnny's	58	Green	LMV	98
Ermosa	Butterhead	Johnny's	48	Green	LMV,TB,B	98
Greengo	Looseleaf	Asgrow	.	Green	—	96-98
Green Vision	Green Leaf	Johnny's	54	Green	B,TB	98
Jen 1197	Endive	Johnny's	.	Green	—	98
Kalura	Romaine	Johnny's	57	Green	LMV,TB	98
Medallion	Romaine	Johnny's	60	Green	B,LMV,TB	98
Mikola	Red Butterhead	Johnny's	49	Red	B,Br,LMV,TB	98
Red Fox	Red Leaf	Johnny's	55	Red	LMV	98
Taglio	Endive	Johnny's	.	Green	—	98
Tango	Looseleaf	Johnny's	45	Green	—	98
Target	Crisphead	Petoseed	65	Green	DM	95,98

. = not found; —= none; from seed catalog
[1]Disease claims: BIT = Bitterness; Bolting = B; LMV = Lettuce Mosaic Virus; TB = Tip Burn; DM = Downy Mildew

TABLE 3. YIELD OF SELECTED LETTEUCE VARIETIES AT THE WIREGRASS SUBSTATION

Variety	Percent stand	Marketable weight lbs/a	Marketable heads #/a	Percent marketable heads	Cull weight lbs/a	Cull heads #/a
Ermosa	98	7,765	16,752	96	87	349
Greengo	100	7,722	17,276	99	44	175
Taglio	94	7,617	15,880	92	1,745	698
Medallion	100	7,050	17,014	98	105	349
Corsair	96	6,744	15,967	92	1,745	698
JEN-1197	100	6,378	13,873	80	1,082	3,577
Kalura	100	6,238	17,188	99	0	0
Green Vision	100	5,078	17,276	99	17	87
Red Fox	100	5,061	16,927	97	96	436
Mikola	98	3,054	15,356	88	253	1,658
Tango	57	2,007	6,282	36	1,291	3,577
Target	99	0	0	0	6,906	14,658
R^2		***0.70***				
CV		***33***				
lsd		***2,583***				

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