

**FALL  
1997**

# **VEGETABLE VARIETY TRIALS**

Progress Report No. 133 June 1998  
Alabama Agricultural Experiment Station  
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# Introduction: Vegetable News & How to Read Vegetable Variety Trial Results

Eric Simonne

## Vegetable News

**AAES field days for 1998.** Field days will be held on September 17 at the Chilton Area Horticulture Substation and on July 21 at the Upper Coastal Plain Substation. Field days are open to the public. For more information, please call the substation directly. These are the only horticulture field days that will be held in 1998.

**Farmers Day at Montgomery Farmers Market on July 11.** All fruit and vegetable growers are invited to take part in a grower's contest at the Farmers Market Day at the Montgomery State Farmers Market on July 11. For more details, call (1-800) 243-4769.

**'Athena' cantaloupe is back on the market.** Despite contradictory reports, it is now official that seeds of 'Athena' will be available for 1998 through Novartis—authorized dealers and transplant growers.

**Pumpkin growers of Alabama now have their association.** The Alabama pumpkin industry has grown. Three years ago, practically no acreage was planted in pumpkins while in 1997, 500 acres were harvested. Much of the acreage is presently located north of Birmingham. The Alabama Pumpkin Association, established in 1997, welcomes members from throughout the state. For your convenience, an application form for membership has been included in the original mailout of this publication. For more information on how to join the association, contact Joe Kemble, Assistant Professor of Horticulture, at (334) 844-3050, or Dwight James, President, at (256) 383-4831.

**Ornamental corn is a good companion crop for pumpkins.** Ornamental corn (also referred to as 'Indian corn') is a good companion crop for pumpkin. Both are in high demand during the Halloween season. Important attributes for ornamental corn include kernel color, ear fill, lack of insect damage, and good plant height. Because ornamental corn varieties can cross-pollinate, they should be isolated from one another if true-to-type kernels are expected.

**Another new sweetpotato variety for 1999?** 'L-89-110' was dropped from the collaborator's trials in 1996, but was still entered in the 1997 AU trials. At their last state conference in February, Alabama sweetpotato grow-

ers have expressed a unanimous desire to have 'L-89-110' released as a variety. This variety yields as well as or slightly better than 'Beauregard' and has all the other desirable attributes of 'Beauregard'. An official request for release has been made to Dr. Don Labonte, sweetpotato breeder at Louisiana State University.

**Three-year summary of vegetable variety trials.** The AAES Bulletin 632 "Varieties for the Alabama Vegetable Industry and the Southeast," summarizing yield data and horticultural characteristics of the major vegetable crops grown in Alabama, was made available in December 1997. An updated version will be available this fall. Copies of Bulletin 632, copies of this publication (Fall 1997 Vegetable Variety Trials, Progress Report 133), as well as copies of past Vegetable Variety Trials (Spring 1994—Prog. Rept. 125, Fall 1994—Prog. Rept. 126, Spring 1995—Prog. Rept. 127, Fall 1995—Prog. Rept. 129, Spring 1996—Prog. Rept. 130, Fall 1996—Prog. Rept. 131, Spring 1997—Prog. Rept. 132) may be obtained by calling the AAES Office of Research Information at (334) 844-4877.

## How to Read Vegetable Variety Trial Results

The main purpose of vegetable variety evaluation is to provide growers and seed retailers with practical information that will help them select a "good" variety. The importance of variety selection cannot be over emphasized: effective marketing begins with variety selection. Here are a few tips about how to get the most out of vegetable variety trial results.

**Open pollinated or hybrid varieties.** In general, hybrids (also referred to as F1) are earlier and produce a more uniform crop. They have improved disease, pest, or virus tolerance/resistance. F1 varieties are often more expensive than open pollinated varieties (OP), and seeds cannot be collected from one crop to plant the next. Despite the advantages hybrids offer, OP are still often planted in Alabama. Selecting a hybrid variety is the first step toward earliness and quality.

**Yield potential.** Yields reported in variety trial results are extrapolated from small plots. Depending on the vegetable crop, plot sizes range between 100 to 500 square feet. Yields per acre are estimated by multiplying

plot yields by corrective factors ranging from 100 to 1,000. Small errors are thus amplified, and estimated yields per acre may not be realistic. Therefore, locations cannot be compared by just looking at the range of yields actually reported. However, the relative differences in performance among varieties are realistic, and can be used to identify best-performing varieties.

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

$R^2$  ranges between 0 and 1. Values close to 1 suggest that the test was conducted under good conditions and the variability observed was mainly due to the effect of variety and replication. Random, uncontrolled errors were of lesser importance. CV is an expression of yield variability relative to yield mean. Low CVs (under 20%) are desirable, but are not always achieved.

There must be a minimum yield difference between two varieties before one can statistically conclude that one variety actually performs better than another. This is known as the least significant difference (Lsd). When the difference in yield is less than the Lsd value, one cannot conclude that there is any real difference between two varieties. For example, in the 1997 cabbage trial conducted at the North Alabama Horticulture Substation in Cullman, 'Bravo' yielded 29,102 pounds per acre, while 'Emblem' and 'Blue Pack' yielded 25,912 and 8,590 pounds per acre, respectively. Since there was less than a 13,936 difference (the Lsd) between 'Bravo' and 'Emblem', there is no statistical difference between these two varieties. However, the yield difference between 'Bravo' and 'Blue Pack' was 20,512, indicating that there is a

real difference between these two varieties. From a practical point of view, producers should place the most importance on Lsd values when interpreting results.

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

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

**Where to get seeds.** Because seeds are alive, their performance and germination rate depend on how old they are, where and how they were collected, and how they have been handled and stored. It is always preferable to get certified seeds from a reputable source, such as the sources listed on page 30.

In conclusion, several factors other than yield have to be considered when choosing a vegetable variety from a variety trial report. The main factors are type, resistance and tolerance to diseases, earliness, and of course availability and cost of seeds. It is always better to try two to three varieties on a small scale before making a large planting of a single variety.

TABLE 1. SOIL TYPE AT THE LOCATION OF THE TRIALS

Location	Water-holding capacity (in/in)	Soil type
Brewton Experiment Field (Brewton)	0.12-0.14	Benndale fine sandy loam
Wiregrass Substation (Headland)	0.14-0.15	Dothan sandy loam
Lower Coastal Plain Substation (Camden)	0.13-0.15	Forkland fine sandy loam
Horticultural Unit, EV Smith Research Center (Shorter)	0.15-0.17	Norfolk-orangeburg loamy sand
Chilton Area Horticultural Substation (Clanton)	0.13-0.15	Luverne sandy loam
North Alabama Horticultural Substation (Cullman)	0.16-0.20	Hartsells-Albertville fine sandy loam
Sand Mountain Substation (Crossville)	0.16-0.18	Wynnvile fine sandy loam

TABLE 2. DESCRIPTION OF RATINGS

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



## Colored Bell Peppers May Do Better in the Fall

Eric Simonne, Edgar Vinson, Joe Little, and Paul Rose

In the spring of 1997, a colored pepper variety trial was conducted at the Lower Coastal Plain Substation (LCPS) in Camden (Tables 1 and 2). On May 27 five-week-old bell peppers were transplanted on bare ground, in single rows at a within-row spacing of one foot. This created a stand of approximately 7,300 plants per acre.

Soils were fertilized according to the recommendations of the Auburn University Soil Testing Laboratory. Names of chemicals are mentioned only for describing the production practices used. This represents neither a recommendation nor an endorsement of these products. Current recommendations for pest and weed control in vegetable production in Alabama may be found in *IPM Commercial Vegetables: Insect, Disease, Nematode and Weed Control Recommendations* (Publication 97IPM-2 from the Alabama Cooperative Extension System).

Preplant fertilization consisted of 200 pounds of 0-20-20 and 70 pounds of nitrogen (N) as ammonium nitrate ( $\text{NH}_4\text{NO}_3$ ) per acre. Preplant herbicide used was Treflan (at a rate of one pint per acre) applied early May. Plots were sidedressed with calcium nitrate [ $\text{Ca}(\text{NO}_3)_2$ ] at a rate of 30 pounds of N per acre applied every other week between June 11 and September 11. Total sidedress application was 180 pounds of N per acre. Alleys between plots were cultivated as needed to control weeds.

**TABLE 1. RATINGS OF SPRING 1997 COLORED BELL PEPPER VARIETY TRIAL<sup>1</sup>**

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

<sup>1</sup>See introduction for a description of rating scales.

No insecticide or fungicide was used. Water was provided as needed through the drip system.

Fruits were harvested at the two-third-colored stage, weighed, and graded using the standards of the *Sweet Pepper Grader's Guide* (Circular ANR-783 of the Alabama Cooperative Extension System). Plots were harvested five times between September 12 and November 3. Early production included the first two harvests (Tables 3 and 4). Because several varieties did not produce any fruits in the Fancy category, mean fruit weight was calculated for the US#1 grade.

All varieties suffered from extreme heat in the spring and summer. This caused delayed harvest and small peppers. 'X3R Camelot' (red), 'Dove' (white), 'Chocolate Beauty' (brown), and 'Enterprise' (red) performed best.

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

Variety	Type <sup>1</sup>	Seed source	Color <sup>2</sup>	Days to harvest	Disease tolerance/resistance <sup>3</sup>	Years evaluated
Blue Jay	F1	Stokes	P-R	73	—	94-97
Camelot X3R	F1	Petoseed	G-R	75	BLS(1,2,3),TMV	94-97
Canary	F1	Stokes	G-Y	72	TbMV	94-97
Chocolate Beauty	F1	Petoseed	G-Br-R	85	TbMV	94,96,97
Dove	F1	Stokes	W-Pk-O	71	—	94-97
Enterprise	F1	Asgrow	G-R	77	BLS(1,2,3),TbMV	95-97
Goldcoast	F1	Asgrow	G-Y	74	BLS(1,2,3),TbMV	95-97

<sup>1</sup>Type: F1 = Hybrid; OP = Open Pollinated.

<sup>2</sup>Color: Bk = black; Br = brown; G = green; O = orange; Pk = pink; R = red; W = white; Y = yellow; P = purple.

<sup>3</sup>Disease tolerance/resistance: TbMV = Tobacco Mosaic Virus; BLS = Bacterial Leaf Spot; — = none; from seed catalogues.

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

Variety	Type <sup>1</sup>	Seed source	Color <sup>2</sup>	Days to harvest	Disease tolerance/resistance <sup>3</sup>	Years Evaluated
Gold Finch	F1	Stokes	W-Y-R	72	—	96,97
Lilac	F1	Sandoz Rogers	P-R	68	TbMV	94-97
Orange Grande	F1	Stokes	G-O	76	TbMV	95-97
Purple Beauty	OP	Petoseed	Bk-R	74	TbMV	96,97

<sup>1</sup>Type: F1 = Hybrid; OP = Open Pollinated.

<sup>2</sup>Color: Bk = black; Br = brown; G = green; O = orange; Pk = pink; R = red; W = white; Y = yellow; P = purple.

<sup>3</sup>Disease tolerance/resistance: TbMV = Tobacco Mosaic Virus; BLS = Bacterial Leaf Spot; — = none; from seed catalogues.

**TABLE 3. EARLY PRODUCTION AND GRADE DISTRIBUTION OF SELECTED COLORED BELL PEPPER VARIETIES GROWN AT THE LOWER COASTAL PLAIN SUBSTATION<sup>1</sup>**

Variety	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
Dove	2,187	0	2,187	1,403	0	11,506	9,810
Camelot X3R	1,673	81	1,592	1,001	246	6,632	8,106
Enterprise	1,336	0	1,336	508	0	7,393	3,981
Goldcoast	1,296	0	1,296	840	0	6,813	7,630
Chocolate Beauty	968	27	941	1,101	123	5,158	9,088
Blue Jay	873	0	873	1,606	0	2,537	13,476
Gold Finch	642	0	642	1,041	0	4,589	9,179
Purple Beauty	501	0	501	1,647	0	2,528	13,275
Lilac	393	0	393	2,095	0	2,180	18,431
Orange Grande	203	0	203	1,103	0	1,299	9,462
Canary	0	0	0	538	0	0	3,488
<i>R</i> <sup>2</sup>	<i>0.60</i>	<i>0.20</i>			<i>0.20</i>		
<i>CV</i>	<i>61</i>	<i>496</i>			<i>461</i>		
<i>lsd</i>	<i>960</i>	<i>29</i>			<i>436</i>		

<sup>1</sup>Cumulative productions of the first two harvests.

**TABLE 4. TOTAL YIELD AND GRADE DISTRIBUTION OF SELECTED COLORED BELL PEPPER VARIETIES GROWN AT THE LOWER COASTAL PLAIN SUBSTATION<sup>1</sup>**

Variety	Total marketable wt. <sup>2</sup> 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 fruit wt. <sup>3</sup> lb
Camelot X3R	8,874	135	8,738	3,081	1,343	368	34,389	22,844	0.25
Dove	8,680	253	8,427	6,821	1,701	969	39,967	48,323	0.21
Chocolate Beauty	7,053	27	6,782	4,102	1,759	140	29,353	34,512	0.24
Enterprise	7,014	0	7,014	4,480	1,392	0	30,330	32,795	0.23
Goldcoast	6,636	0	6,636	3,104	977	0	27,931	23,026	0.24
Blue Jay	4,922	0	4,922	7,226	1,218	0	22,038	57,393	0.23
Canary	4,224	0	4,224	7,642	1,286	0	20,928	60,168	0.20
Orange Grande	3,962	0	3,962	6,373	1,524	0	14,657	45,084	0.27
Gold Finch	3,522	0	3,522	5,689	2,643	0	18,128	42,682	0.19
Purple Beauty	1,976	0	1,976	8,799	1,489	0	9,605	72,166	0.21
Lilac	1,038	0	1,038	11,564	896	0	5,351	102,856	0.19
<i>R</i> <sup>2</sup>	<i>0.61</i>	<i>0.30</i>			<i>0.50</i>	<i>0.44</i>			
<i>CV</i>	<i>47</i>	<i>285</i>			<i>44</i>	<i>244</i>			
<i>lsd</i>	<i>2,880</i>	<i>279</i>			<i>960</i>	<i>436</i>			

<sup>1</sup>Actual harvest dates were September 12, September 23, October 2, October 20, and November 3.

<sup>2</sup>Marketable yield was determined as Fancy + US#1 grades.

<sup>3</sup>Individual fruit weight was determined on the US#1 grade.





## 'Punchline' Among Best Yellow Supersweet Sweet Corn

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

In the spring of 1997, sugary and sugar-enhanced (*su/se*) and supersweet (*sh2*) sweet corn varieties were evaluated at the Wiregrass Substation (WS) in Headland (Tables 1 and 2). Cultural practices for *su*, *se*, and *sh2* types were similar. However, *sh2* varieties were separated by 300 feet from other field and sweet corn plantings because cross-pollination alters grain characteristics, including sweetness. Plots were 20 feet long and eight feet wide and consisted of four rows. Within-row spacing was eight inches, creating a stand of approximately 32,700 plants per acre. Yields were not adjusted for stand.

Fertilizer was applied according to the recommendations of the Auburn University Soil Testing Laboratory. Names of chemicals are mentioned only for describing the production practices used. This represents neither a recommendation nor an endorsement of these products. Current recommendations for pest and weed control in vegetable production in Alabama may be found in *IPM Commercial Vegetables: Insect, Disease, Nematode and Weed Control Recommendations* (Publication 97IPM-2 from the Alabama Cooperative Extension System).

Preplant fertilization consisted of a broadcast application of 13-13-13 at a rate of 250 pounds per acre and of a 16-16-0 liquid fertilizer (11 pounds per gallon) at a rate of 15 gallons per acre. The planting date was April 8. Plots were sidedressed with 60 pounds of N as  $\text{NH}_4\text{NO}_3$  per acre on May 23. Lannate LV insecticide was applied at a rate of one quart per acre on May 27. Both tests were over-head irrigated with 1.25 inches of water on May 13, May 30, May 25, June 5, June 13, June 19, June 28, and July 3.

*Su/se* varieties were harvested as needed between June 9 and June 23. *Sh2* varieties were harvested as needed between June 21 and July 2. For the *su/se* test, first harvest occurred 62 days after planting (DAP) for 'Sparkler' and 'Spring Snow'; 65 DAP for 'Snow Belle', 'Fantasia', 'Merit', 'Silver King', 'WH-4487', and 'Rising Star'; and 77 DAP

TABLE 1. RATINGS OF SPRING 1997 SWEET CORN VARIETY TRIAL<sup>1</sup>

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

<sup>1</sup>See introduction for a description of rating scales.

for 'Silver Queen'. For the *sh2* test, first harvest occurred 74 DAP for 'A-Maizingly-Sweet', 'Double Dots', 'Prime Plus', 'Punchline', and 'Victor'; 76 DAP for 'Sweet Rhythm', 'Sweet Symphony', 'FMX 415', and 'Challenger'; and 86 DAP for 'Festival', 'Bi-Time', 'SS 8102', 'Prime Plus', 'SS 8100', and 'Endeavor'.

After harvest, ears were graded following the *Sweet Corn Grader's Guide* (Circular ANR-679 of the Alabama Cooperative Extension System). Yield (Tables 3 and 4) and ear characteristics (Table 5) were determined. For all varieties, ear diameters were similar and ranged between 1.4 and 1.7 inches.

In the white *su/se* group, 'Silver King', 'WH-4487', and 'Fantasia' were the highest yielders, while the yield of 'Silver Queen' was lowest. *Sh2* varieties tended to perform better than the *su/se* ones. In the bi-color group, 'Double Dots' was the highest yielder. In the yellow group, 'Prime Time' and 'Punchline' performed best. 'A-Maizingly-Sweet' (bi-color) and 'Punchline' (yellow) had the highest ear quality rating.

**TABLE 2. SEED SOURCE, FRUIT CHARACTERISTICS, AND RELATIVE EARLINESS OF SELECTED BI-COLOR AND WHITE SWEET CORN VARIETIES<sup>1</sup>**

Variety	Seed source	Color	Type	Days to harvest	Disease tolerance/resistance <sup>2</sup>	Years evaluated
A-Maizingly Sweet	Ferry-Morse	BC	sh2	82	CR	96,97
Bi-Time	Sandoz Rogers	BC	sh2	•	—	97
Challenger	Asgrow	Y	sh2	78	CS,NCLB,SBW,SCLB	94-97
Double Dots	Ferry-Morse	BC	sh2	•	—	97
Endeavor	Asgrow	Y	sh2	78	ANT,CS,NCLB,SCLB	97
Fantasia	Asgrow	W	se	82	CR,CS	95-97
Festival	Asgrow	BC	sh2	75	NCLB	94-97
FMX 415	Ferry-Morse	W	sh2	•	•	96,97
Merit	Asgrow	Y	su	78	CS,SBW,SCLB,MDMV NCLB	96,97
Prime Plus	Sandoz Rogers	Y	sh2	•	—	97
Prime Time	Sandoz Roger	Y	sh2	•	—	97
Punchline	Asgrow	Y	sh2	74	ANT,NCLS,SBW,SCLB	94-97
Rising Star	SeedWay	W	se	79	SBW	96,97
Silver King	Sandoz Rogers	W	se	82	CR,NCLB,SBW	97
Silver Queen	SeedWay	W	su	92	NCLB,SBW,SCLB	94-97
Snow Belle	Asgrow	W	se	85	CR,SCLB	95-97
Sparkler	Solar Seeds	W	se	•	—	97
Spring Snow	Harris Seeds	W	se	66	SBW	97
SS 8100	A&C	Y	sh2	•	—	97
SS 8102	A&C	BC	sh2	81	NCLB,SBW,SCLB	94,96,97
Sweet Rhythm	Harris Seeds	BC	sh2	73	CS,SBW	96,97
Sweet Symphony	Harris Seeds	BC	sh2	75	CS,CW,MDMV	97
Victor	Ferry-Morse	Y	sh2	80	CS,NCLB	96,97
WH 4487	Sandoz Rogers	W	se	•	—	97

<sup>1</sup>• = not available; — = none; from seed catalogues.

<sup>2</sup>Disease: CR = corn rust; CS = corn smut; MDMV = maize dwarf mosaic virus; NCLB = northern corn leaf blight; SBW = Stewart bacterial wilt; SCLB = southern corn leaf blight; ANT = anthracnose.

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 SU/SE SWEET CORN VARIETIES GROWN AT THE WIREGRASS SUBSTATION**

Variety	Kernel color <sup>1</sup>	Type <sup>2</sup>	Yield lbs/a	Ear #/a	Stand <sup>3</sup> %	Ear set height in
Silver King	W	se	17,974	63,275	145	14
WH-4487	W	se	12,660	41,148	157	13
Fantasia	W	se	12,573	46,652	87	12
Sparkler	W	se	12,421	56,953	158	4
Rising Star	W	se	10,862	35,044	120	11
Snow Belle	W	se	9,363	46,598	133	11
Merit	Y	se	8,622	30,084	150	17
Spring Snow	W	se	6,055	34,281	107	4
Silver Queen	W	su	3,085	10,246	132	11
<i>R</i> <sup>2</sup>			<i>0.62</i>	<i>0.64</i>		<i>0.78</i>
<i>CV</i>			<i>35</i>	<i>32</i>		<i>23</i>
<i>lsd</i>			<i>5,297</i>	<i>18,552</i>		<i>3</i>

<sup>1</sup>Kernel color: Y = yellow, W = white; BC = bi-color.

<sup>2</sup>Type: su = sugary; se = sugar enhanced.

<sup>3</sup>100% stand corresponds to 32,700 plants per acre.

**TABLE 4. YIELD OF SELECTED SH2 SWEET CORN VARIETIES GROWN AT THE WIREGRASS SUBSTATION**

Variety	Kernel color <sup>1</sup>	Type <sup>2</sup>	Yield lbs/a	Ear #/a	Stand <sup>3</sup> %	Ear set height in
Double Dots	BC	sh2	28,776	56,517	143	12
A-Maizingly Sweet	BC	sh2	21,108	41,529	61	4
Sweet Symphony	BC	sh2	19,119	45,671	158	15
Sweet Rythm	BC	sh2	17,217	40,657	154	11
SS 8102	BC	sh2	13,750	24,580	148	14
Bi-Time	BC	sh2	12,748	25,397	165	21
Festival	BC	sh2	3,286	7,630	42	11
Prime Time	Y	sh2	32,989	68,180	169	21
Punchline	Y	sh2	27,544	66,381	168	6
Victor	Y	sh2	21,429	41,148	72	13
Prime Plus	Y	sh2	16,568	33,790	167	20
Challenger	Y	sh2	15,930	34,499	145	16
SS 8100	Y	sh2	12,895	26,215	163	18
Endeavor	Y	sh2	11,837	25,179	155	21
FMX 415	Y	sh2	11,483	22,291	96	14
<i>R</i> <sup>2</sup>			<b>0.79</b>	<b>0.78</b>		<b>0.97</b>
<i>CV</i>			<b>25</b>	<b>27</b>		<b>6</b>
<i>lsd</i>			<b>7,806</b>	<b>17,734</b>		<b>1</b>

<sup>1</sup>Kernel color: Y = yellow, W = white; BC = bi-color. Data are sorted by color.

<sup>2</sup>Type: sh2 = shrunken.

<sup>3</sup>100% stand corresponds to 32,700 plants per acre.

**TABLE 5. EAR CHARACTERISTICS OF SELECTED SWEET CORN VARIETIES GROWN AT THE WIREGRASS SUBSTATION**

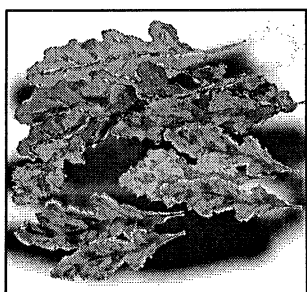
Variety	Kernel color <sup>1</sup>	Type <sup>2</sup>	Quality rating <sup>3</sup>	Tip cover rating <sup>4</sup>	Ear fill rating	Eye appeal rating	Ear length in
A-Maizingly Sweet	BC	sh2	9.2	2.5	3.4	3.3	7.23
Double Dots	BC	sh2	8.5	2.6	3.1	2.8	6.63
Sweet Rythm	BC	sh2	8.2	2.2	3.1	2.9	6.65
SS 8102	BC	sh2	8.1	3.4	2.2	2.5	6.99
Sweet Symphony	BC	sh2	7.3	2.4	2.7	2.2	6.55
Bi-Time	BC	sh2	7.1	2.7	2.4	2.0	6.95
Festival	BC	sh2	6.9	2.4	2.6	1.9	6.73
Punchline	Y	sh2	8.6	3.2	2.7	2.7	6.68
Victor	Y	sh2	8.6	3.1	2.5	3.0	7.34
SS 8100	Y	sh2	7.7	2.7	2.8	2.2	7.01
Prime Time	Y	sh2	7.0	2.6	2.3	2.1	7.10
Endeavor	Y	sh2	6.8	2.0	2.5	2.3	7.45
Prime Plus	Y	sh2	6.7	2.3	2.1	2.3	7.09
FMX 415	Y	sh2	6.0	2.1	2.1	1.8	7.45
Challenger	Y	sh2	5.6	2.0	1.9	1.7	7.15
<i>R</i> <sup>2</sup>			<b>0.83</b>	<b>0.80</b>	<b>0.80</b>	<b>0.80</b>	<b>0.98</b>
<i>CV</i>			<b>22</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>7</b>
<i>lsd</i>			<b>1.2</b>	<b>0.5</b>	<b>0.5</b>	<b>0.5</b>	<b>0.4</b>

<sup>1</sup>Kernel color: Y = yellow, W = white; BC = bi-color. Data are sorted by color.

<sup>2</sup>Type: sh2 = shrunken.

<sup>3</sup>Quality rating is the sum of tip cover, ear fill, and eye appeal ratings. Quality data not available for 'Dazzle', 'Diabolo', and 'Maxim'.

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



## 'All Top' Turnip Green is Really All Tops

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

Leafy green (collard, kale, mustard, and turnip) variety trials were conducted at Brewton Experiment Field (BEF) in Brewton and the Horticulture Unit at the E. V. Smith Research Center (EVSRC) in Shorter (Tables 1 and 2).

At BEF, leafy greens were direct seeded on October 6 onto 20-foot-long and five-foot-wide plots. Plots contained seven rows which created a stand of approximately 500,000 plants per acre. At EVSRC, leafy greens were double cropped following a spring planting of cantaloupe. Beds were covered with white plastic and contained two drip tapes one foot apart. After final harvest, cantaloupe vines were removed from the field and new holes were punched for the leafy greens. Six-week-old leafy greens were transplanted on August 29. Spacing consisted of staggered triple rows 12 inches apart. Within-row spacing was 12 inches for kale and turnip, and 18 inches for collard. All plots were 12 feet long, which created a stand of approximately 27,000 plants per acre for kale and turnip, and 18,000 plants per acre for collard.

Soils were fertilized according to the recommendations of the Auburn University Soil Testing Laboratory. Names of chemicals are mentioned only for describing the production practices used. This represents neither a recommendation nor an endorsement of these products. Current recommendations for pest and weed control in vegetable production in Alabama may be found in *IPM Commercial Vegetables: Insect, Disease, Nematode and Weed Control Recommendations* (Publication 97IPM-2 from the Alabama Cooperative Extension System).

At BEF, fertilization consisted of preplant applications of 1,000 pounds of 5-10-5 and 175 pounds of ammonium nitrate ( $\text{NH}_4\text{NO}_3$ ) per acre. Ammonium nitrate was also sidedressed on December 1.

**TABLE 1. RATINGS OF 1997 LEAFY GREENS VARIETY TRIALS<sup>1</sup>**

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

<sup>1</sup>See introduction for a description of rating scales.

At EVSRC, fertilization consisted of injections of six pounds of N per acre, alternately from a liquid calcium nitrate [ $\text{Ca}(\text{NO}_3)_2$ ] solution (9-0-0-11) and from 20-10-20. Weekly injections started on August 29 and ended on October 14 and provided a total of 50 pounds of N. Insect control consisted of applications of Dipel 4L (two pints per acre) once per week beginning August 30 and ending October 11, and one application of Asana XL (at a rate of 9.6 ounces per acre) on August 30.

At both locations, leafy greens were harvested when they reached marketable size (Table 3). At BEF, harvest dates were November 17 for kale, mustard, and turnip and January 23 for collard. At EVSRC, all greens were harvested on December 16. Leaf yields were expressed in 30-pound bushels.

Turnip and mustard were harvested approximately 30 days before collard. 'Flash Hybrid' and 'Top Bunch' collard, as well as 'All Top', 'Seven Top', and 'Royal Crown' turnip had highest green yields. Differences in leaf yield between 'Southern Giant Curled' and 'Florida Broad Leaf' mustard were small. Mustard varieties did not perform as well as the top turnip varieties.

**TABLE 2. SEED SOURCE AND EARLINESS OF SELECTED LEAFY GREEN VARIETIES**

Variety	Type <sup>1</sup>	Crop	Seed source	Days to harvest <sup>2</sup>
All Top	OP	Turnip	Sakata	50
Blue Ridge	F1	Kale	Sakata	•
Champion	OP	Collard	Harris Seed	75
Flash Hybrid	F1	Collard	A&C, Stokes	73
Georgia	OP	Collard	Stokes	80

<sup>1</sup>OP=open pollinated; F1=hybrid; from seed catalogue.      <sup>2</sup>• = not available; from seed catalogue.

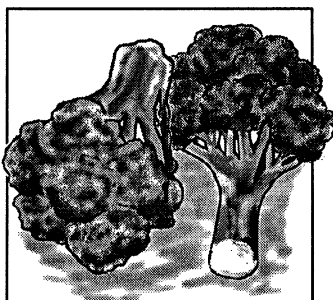
TABLE 2, CONTINUED. SEED SOURCE AND EARLINESS OF SELECTED LEAFY GREEN VARIETIES

Variety	Type <sup>1</sup>	Crop	Seed source	Days to harvest <sup>2</sup>
Florida Broad Leaf	OP	Mustard	Asgrow,Stokes	50
Purple top White Globe	OP	Turnip	Asgrow,Stokes	60
Royal Crown	F1	Turnip	Stokes	50
Seven Top	OP	Turnip	Asgrow,Stokes	45
Southern Giant Curled	OP	Mustard	Petoseed	45
Top Bunch	F1	Collard	Sakata	70
Vates	OP	Collard	Stokes	56
White Lady	F1	Turnip	Stokes	35

<sup>1</sup>OP=open pollinated; F1=hybrid.<sup>2</sup>From seed catalogue.TABLE 3. LEAF AND ROOT YIELD OF SELECTED LEAFY GREEN VARIETIES (30-POUND BUSHEL)<sup>1</sup>

Variety	Crop	Leaf weight bu/a	Root weight bu/a	Stand %
Brewton Experiment Field				
Flash Hybrid	Collard	394	—	—
Top Bunch	Collard	319	—	—
Georgia	Collard	297	—	—
Champion	Collard	196	—	—
Florida Broad Leaf	Mustard	430	—	—
Southern Giant Curled	Mustard	373	—	—
All Top	Turnip	687	—	—
Royal Crown	Turnip	464	—	—
Purple Top White Globe	Turnip	436	—	—
White Lady	Turnip	429	—	—
Seven Top	Turnip	390	—	—
<i>R</i> <sup>2</sup>		<b>0.90</b>		
<i>CV</i>		<b>12</b>		
<i>lsd</i>		<b>66</b>		
E.V. Smith Research Center				
Top Bunch	Collard	945	0	95
Flash Hybrid	Collard	913	0	91
Vates	Collard	890	0	91
Champion	Collard	740	0	93
Georgia	Collard	471	0	87
Blue Ridge	Kale	725	0	93
Southern Giant Curled	Mustard	1,065	0	71
Florida Broad Leaf	Mustard	944	0	62
All Top	Turnip	1,764	14,582	66
Seven Top	Turnip	1,386	8,829	76
Purple Top White Globe	Turnip	775	27,268	73
White Lady	Turnip	616	43,013	74
Royal Crown	Turnip	612	21,215	67
<i>R</i> <sup>2</sup>		<b>0.78</b>	<b>0.96</b>	<b>0.83</b>
<i>CV</i>		<b>22</b>	<b>34</b>	<b>8</b>
<i>lsd</i>		<b>133</b>	<b>2,031</b>	<b>9</b>

<sup>1</sup> — = not available.



## 'Galeon' and 'Packman' Top Broccoli Varieties in 1997

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

A broccoli variety trial was conducted at the Horticulture Unit of the E.V. Smith Research Center (EVSRC) in Shorter (Tables 1 and 2). Broccoli was evaluated as a second crop following summer squash. After final harvest, squash plants were rouged from the field. Broccoli was transplanted in staggered triple rows on August 29, which created a stand of approximately 27,000 plants per acre. The plants were drip irrigated and the beds were covered with white plastic mulch.

Fertilizer was applied according to the recommendations of the Auburn University Soil Testing Laboratory. Names of chemicals are mentioned only for describing the production practices used. This represents neither a recommendation nor an endorsement of these products. Current recommendations for pest and weed control in vegetable production in Alabama may be found in *IPM Commercial Vegetables: Insect, Disease, Nematode and Weed Control Recommendations* (Publication 97IPM-2 from the Alabama Cooperative Extension System).

Between August 29 and December 3, fertilization consisted of injections of seven pounds of N per acre alternatively from a liquid calcium nitrate [Ca(NO<sub>3</sub>)<sub>2</sub>] solution (9-

**TABLE 1. RATINGS OF 1997 BROCCOLI VARIETY TRIAL<sup>1</sup>**

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

<sup>1</sup>See introduction for a description of rating scales.

0-0-11) and 20-10-20. Insect control consisted of weekly applications of Dipel (two pints per acre) from August 30 through October 11, and one application of Asana XL (9.6 ounces per acre) on August 30.

Heads were harvested when they reached six inches in diameter. Harvest dates were October 20, October 28, November 4, November 10, November 17, November 23, December 1, and December 10. Marketable weight (in numbers of 23-pound cartons) and corresponding number of heads were recorded (Table 3).

**TABLE 2. SEED SOURCE, EARLINESS, AND DISEASE TOLERANCE/RESISTANCE OF SELECTED BROCCOLI VARIETIES**

Variety	Type <sup>1</sup>	Seed source	Earliness	Disease tolerance/resistance <sup>2</sup>
Arcadia	F1	Sakata	86	DM
Gallant	F1	Sakata	•	—
Galeon	F1	Petoseed	75	—
Greenbelt	F1	Sandoz Rogers/Sakata	75	—
Legend	F1	Sakata	85	DM
Packman	F1	Petoseed/Stokes	78	—

<sup>1</sup>Type: F1 = hybrid; from seed catalogues.

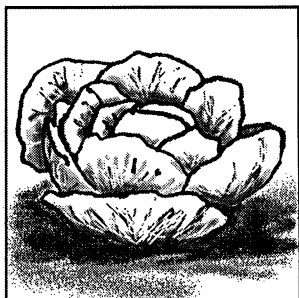
<sup>2</sup>Disease tolerance/resistance: DM = downy mildew; • = not available; — = none; from seed catalogues.

**TABLE 3. YIELD OF SELECTED BROCCOLI VARIETIES AT THE E.V. SMITH RESEARCH CENTER**

Variety	Marketable 23-lb carton #/a	Marketable yield lbs/a	Marketable heads #/a	Stand <sup>1</sup> %	Marketable head number <sup>2</sup> %
Galeon	529	12,175	20,771	86	93
Packman	349	8,027	18,156	93	74
Legend	278	6,404	8,909	84	41
Gallant	277	6,365	10,071	77	52
Arcadia	193	4,435	8,715	96	35
Greenbelt	36	831	2,324	91	10
<i>R</i> <sup>2</sup>		<i>0.85</i>	<i>0.91</i>	<i>0.41</i>	<i>0.84</i>
<i>CV</i>		<i>21</i>	<i>17</i>	<i>11</i>	<i>22</i>
<i>Isd</i>		<i>1,743</i>	<i>4,358</i>	<i>17</i>	<i>25</i>

<sup>1</sup>100% stand corresponds to 27,000 plants per acre.

<sup>2</sup>Marketable head number relative to actual stand.



## Bravo! 'Bravo' Cabbage

Eric Simonne, Edgar Vinson, Randy Akridge, and Arnold Caylor

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

At both locations, six-week-old cabbage was transplanted onto 20-foot-long plots. Transplanting dates were September 3 at BEF and August 27 at NAHS. At BEF, cabbage was double cropped following a spring planting of cantaloupe on black plastic. Two rows of cabbage were established six inches off each side of the drip tape. Within-row spacing was one foot and plots contained 40 plants each, which created a stand of approximately 18,000 plants per acre. At NAHS, cabbage was planted on bare ground in single rows two feet apart. This created a stand of approximately 16,000 plants per acre.

Soils were fertilized according to the recommendations of the Auburn University Soil Testing Laboratory. Names of chemicals are mentioned only for describing the production practices used. This represents neither a recommendation nor an endorsement of these products. Current recommendations for pest and weed control in vegetable production in Alabama may be found in *IPM Commercial Vegetables: Insect, Disease, Nematode and Weed Control Recommendations* (Publication 97IPM-2 from the Alabama Cooperative Extension System).

At BEF, fertilization consisted of six pounds of N per acre injected as calcium nitrate [ $\text{Ca}(\text{NO}_3)_2$ ] on September 6; as ammonium nitrate ( $\text{NH}_4\text{NO}_3$ ) on September 11, September 26, October 2, October 16, October 30, and November 11; and as potassium nitrate ( $\text{KNO}_3$ ) on September 18. Insect control consisted of applications of Dipel (at a rate of 1.5 pints per acre) on September 19, September 29, and October 16; Lannate LV (at a rate of one quart per acre) on September 19 and October 16; and Larvin (at a rate of one quart per acre) on September 29.

**TABLE 1. RATINGS OF 1997 CABBAGE VARIETY TRIALS<sup>1</sup>**

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

<sup>1</sup>See introduction for a description of rating scales.

At NAHS, 500 pounds of 13-13-13 were applied on September 22. Insecticides applied were Asana XL (at a rate of 9.6 ounces per acre) on September 5; Dipel (at a rate of one pound per acre) on October 3; and Lannate (at a rate of three pints per acre) and Javelin (at 1.5 pounds per acre) both on October 3.

When they reached marketable size, cabbage heads were harvested with four wrapper leaves and graded according to *United States Standards for Grades of Cabbage* (U.S. Department of Agriculture 46 FR 63203). Harvest dates were January 8 and 23 at BEF, and January 12 at NAHS. Marketable weight (in numbers of 50-pound cartons) and corresponding number of heads were recorded (Table 3).

At BEF, 'Bravo', 'Emblem', and 'Cheers' performed best under growing conditions that resulted in overall low marketable yields. At NAHS, the standard 'Bravo' had the highest yield. The experimentals 'FMX 551' and 'FMX 552' showed good potential. 'Fortress' and 'Blue Pack' had high cull rates.



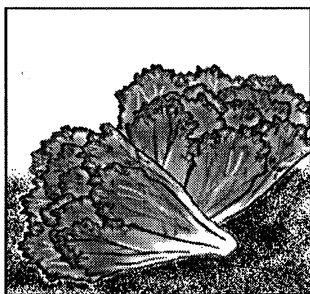
**TABLE 2. SEED SOURCE, EARLINESS, AND DISEASE RESISTANCE/TOLERANCE OF SELECTED HEAD CABBAGE VARIETIES**

Variety	Type <sup>1</sup>	Head color	Seed source	Days to harvest	Disease resistance/tolerance <sup>2</sup>
Bravo	F1	Green	Harris Seeds	85	FY, BR
Cheers	F1	Green	Takii	75	BR, FY
Fortress	F1	Green	Ferry-Morse	99	BR, FY
FMX 551	F1	Green	Ferry-Morse	•	—
FMX 552	F1	Green	Ferry-Morse	•	—
Emblem	F1	Green	Rupp Seeds	85	BR, TB, FY
Blue Pak	F1	Green	Ferry-Morse	80	FY

<sup>1</sup>F1 = hybrid.<sup>2</sup>FY = fusarium yellows; BR = black rot; TB = tip burn; • = not available; — = none; from seed catalogue.**TABLE 3. YIELD OF SELECTED CABBAGE VARIETIES**

Variety	Marketable yield 50-lb carton/a	Marketable yield lbs/a	Marketable heads #/a	Percent marketable head number <sup>1</sup>	Stand %
Brewton Experiment Field					
FMX 551	289	14,460	4,905	44	71
FMX 552	266	13,309	4,142	29	83
Cheers	247	12,342	3,779	24	88
Emblem	211	10,527	2,834	29	56
Bravo	204	10,192	3,052	30	67
Fortress	136	6,778	2,035	17	67
Blue Pak	80	3,981	981	16	46
<i>R</i> <sup>2</sup>		<i>0.32</i>	<i>0.37</i>	<i>0.23</i>	<i>0.55</i>
<i>CV</i>		<i>56</i>	<i>61</i>	<i>70</i>	<i>21</i>
<i>lsd</i>		<i>3,434</i>	<i>3,271</i>	<i>24</i>	<i>27</i>
North Alabama Horticulture Substation					
Bravo	582	29,102	13,283	80	96
FMX 551	579	28,950	15,460	88	100
FMX 552	520	25,988	13,718	80	99
Emblem	518	25,912	10,888	74	85
Cheers	417	20,828	11,323	67	98
Fortress	298	14,916	8,492	50	99
Blue Pak	172	8,590	6,750	41	93
<i>R</i> <sup>2</sup>		<i>0.44</i>	<i>0.60</i>	<i>0.57</i>	<i>0.42</i>
<i>CV</i>		<i>42</i>	<i>24</i>	<i>23</i>	<i>7</i>
<i>lsd</i>		<i>13,936</i>	<i>4,355</i>	<i>24</i>	<i>10</i>

<sup>1</sup>Percent marketable head is of actual stand.<sup>2</sup>100% stand corresponds to 18,000 and 16,000 plants per acre at BEF and NAHS, respectively.



## 'Red Prize' Earliest Leaf Lettuce Variety

Eric Simonne, Amy Simonne, Edgar Vinson, Jim Bannon, and  
Jason Burkett

A lettuce variety trial was conducted at the Horticulture Unit at the E.V. Smith Research Center (EVSRC) in Shorter (Tables 1 and 2). Lettuce was double cropped following a spring planting of cantaloupe. Beds were covered with white plastic and two drip tapes one foot apart had been prepared before cantaloupe were established. After final harvest, cantaloupe vines were rouged and new holes were punched for lettuce.

On September 3, six-week-old lettuce were transplanted in staggered triple rows 12 inches apart at an in-row spacing of 12 inches. This created a stand of approximately 27,000 plants per acre.

Soils were fertilized according to the recommendations of the Auburn University Soil Testing Laboratory. Names of chemicals are mentioned only for describing the production practices used. This represents neither a recommendation nor an endorsement of these products. Current recommendations for pest and weed control in vegetable production in Alabama may be found in *IPM Commercial Vegetables: Insect, Disease, Nematode and Weed Control Recommendations* (Publication 97IPM-2 from the Alabama Cooperative Extension System).

A liquid calcium nitrate [ $\text{Ca}(\text{NO}_3)_2$ ] solution (9-0-0-11) and 20-10-20 were injected (before transplanting) on August 29 and September 2 at a rate of six pounds of N per acre each. Between September 5 and October 14, fertilization consisted of weekly injections of six pounds of N per

**TABLE 1. RATINGS OF SPRING 1997 LETTUCE VARIETY TRIAL<sup>1</sup>**

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

<sup>1</sup>See introduction for a description of rating scales.

acre, alternately from a liquid calcium nitrate solution (9-0-0-11) and 20-10-20. Insect control consisted of weekly applications of Dipel 4L (at a rate of two pints per acre) between August 30 and October 11, and of one application of Asana XL (at a rate of 9.6 ounces per acre) on August 30.

Lettuce was harvested on October 8 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, and marketable and total yields are reported separately (Table 3). Marketable yield was used to determine relative earliness. A better comparison for yield potential of each variety may be made from total yield and head number results. While most varieties grew well, 'Sierra' was the most attractive overall.

**TABLE 2. SEED SOURCE, EARLINESS, AND DISEASE RESISTANCE/TOLERANCE OF SELECTED LETTUCE VARIETIES**

Variety	Seed source	Days to harvest	Head type	Leaf color	Disease resistance/tolerance <sup>1</sup>	Years evaluated
Cabernet Red	Asgrow	66	Looseleaf	Red	•	96,97
Greengo	Asgrow	•	Looseleaf	Green	•	96,97
Legacy	Takii	•	Crisphead	Green	•	95-97
Nancy	SeedWay	66	Butterhead	Green	•	96,97
Nevada	Vilmorin	58	Batavia	Green	DM,LMV,TB	95-97
Optima	Vilmorin	55	Butterhead	Green	DM,LMV	95-97
Parris Island	Stokes	65	Romaine	Green	TB	95-97
Red Prize	Ferry-Morse	46	Looseleaf	Green/Red	TB	96,97
Salinas 88 Supreme	Sakata	75	Crisphead	Green	LMV	95-97
Sierra	Vilmorin	•	Batavia	Green/Red	DM,LMV,TB	95-97

<sup>1</sup>Disease claims: LMV = Lettuce Mosaic Virus; TB = Tip Burn; DM = Downy Mildew; • = not found; from seed catalogue.

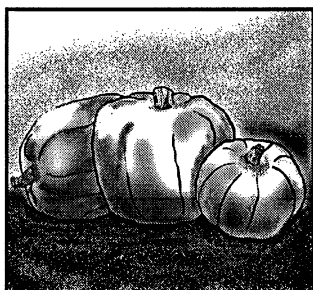
**TABLE 3. YIELD OF SELECTED LETTUCE VARIETIES GROWN AT THE E.V. SMITH RESEARCH CENTER**

Variety	Total weight lbs/a	Total heads #/a	Marketable weight lbs/a	Marketable heads #/a	Cull weight lbs/a	Cull heads #/a	Stand <sup>1</sup> %	Earliness rating <sup>2</sup>	Bitterness rating <sup>3</sup>
Sierra	16,031	26,051	16,031	26,051	0	0	100	35	0
Legacy	13,669	25,179	13,177	24,525	492	654	96	45	0
Nevada	13,069	25,833	13,069	25,833	0	0	99	32	0.25
Greengo	12,865	25,942	144	436	12,721	25,506	99	30	2
Salinas 88 Supreme	12,829	26,160	12,829	26,160	0	0	100	45	1
Parris Island	11,235	25,615	48	109	11,187	25,506	98	29	1.5
Optima	10,719	25,615	168	763	10,551	24,852	98	31	1.5
Nancy	9,592	23,653	2,014	5,668	7,578	17,985	90	32	0.5
Red Prize	7,985	25,506	5,515	16,023	2,470	9,483	98	29	0
Cabernet Red	7,722	26,269	1,954	8,066	5,767	18,203	100	35	1
Epic	6,714	22,672	6,427	22,236	288	436	87	35	0
<i>R</i> <sup>2</sup>	<b>0.70</b>	<b>0.40</b>	<b>0.95</b>	<b>0.97</b>			<b>0.40</b>		
<i>CV</i>	<b>19</b>	<b>5</b>	<b>24</b>	<b>17</b>			<b>5</b>		
<i>lsd</i>	<b>2,880</b>	<b>1,744</b>	<b>1,920</b>	<b>3,488</b>			<b>7</b>		

<sup>1</sup>100% stand corresponds to 27,000 plants per acre.

<sup>2</sup>Earliness rating (observed): actual number of days after transplanting necessary to produce a harvestable lettuce under the conditions of the test.

<sup>3</sup>Bitterness rating: 0 = sweet; 1 = slight; 2 = marked; 3 = bitter; 4 = unpleasant.



## Pumpkin Production is Increasing in Alabama

Eric Simonne, Edgar Vinson, Jim Bannon, Booby Boozer, Jason Burkett, Arnold Caylor, Tony Dawkins, Jim Pitts, and Marvin Ruf

Pumpkin variety trials were conducted at the Horticulture Unit at the E.V. Smith Research Center (EVSRC) in Shorter, the Chilton Area Horticulture Substation (CAHS) in Clanton, the Sand Mountain Substation (SMS) in Crossville, and the North Alabama Horticulture Substation (NAHS) in Cullman (Tables 1 and 2). Trials were also established at the Gulf Coast Substation (GCS) in Fairhope and the Wiregrass Substation (WS) in Headland. However, a rainstorm which occurred a few days after planting at GCS and extreme summer heat at WS destroyed these tests.

At EVSRC and NAHS, plots were 50 feet long and contained four replications per variety. At CAHS and SMS, plots were 100 feet long and contained only two replications. At all locations, hills were spaced 10 feet apart and contained two plants each. Between-row spacing was 10 feet. Planting dates were July 7 at EVSRC and NAHS, and July 11 at CAHS and SMS.

Soils were fertilized according to the recommendations of the Auburn University Soil Testing Laboratory. Names of chemicals are mentioned only for describing the production practices used. This represents neither a recommendation nor an endorsement of these products. Current recommendations for pest and weed control in vegetable production in Alabama may be found in *IPM Commercial Vegetables: Insect, Disease, Nematode and Weed Control Recommendations* (Publication 97IPM-2 from the Alabama Cooperative Extension System).

At EVSRC, 0-20-20 and 15.5-0-0 fertilizers were broadcast applied preplant on July 3 at a rate of 500 and 322 pounds per acre, respectively. On July 30, plants were sidedressed with 15.5-0-0 at a rate of 193 pounds per acre. Herbicide used was Prefar 6EC herbicide (at a rate of four quarts per acre) on July 7. Insecticides used were Asana XL (at a rate of 9.6 ounces per acre) on July 23, July 30, August 9, August 15, September 6, September 13, and September 27; and Ambush (at a rate of eight ounces per acre) on August 22, August 30, and September 20. Fungicides used were Terranil 6L (at a rate of 1.3 pints per acre) on July 23, July 30, August 9, August 15, September 6, September 13, September 27; and Benlate 50 WP (at a rate of 0.5 pounds per acre) and Manex (at a rate of 1.5 quarts per acre) both applied on August 22, August 30, and September 20.

TABLE 1. RATINGS OF 1997 PUMPKIN VARIETY TRIALS<sup>1</sup>

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

<sup>1</sup>See introduction for a description of rating scales.

At CAHS, fertilization consisted of a preplant application of 400 pounds of 13-13-13 and a sidedress application of ammonium nitrate ( $\text{NH}_4\text{NO}_3$ ). Insecticides used were Asana XL (at a rate of nine ounces per acre) on July 26, August 2, and August 16; and Phaser (at a rate of 1.5 pints per acre) on August 9 and 30. Fungicides used were Bravo 720 (at a rate of two pints per acre) on July 26, August 8, August 23, September 4, September 12, September 19, and September 25; Ridomil 50W (at a rate of 1.5 pounds per acre) on August 2, August 16, August 30, and September 7; Manzate 200 (at a rate of two pounds per acre) on August 2 and 30; and Benlate (at a rate of 0.5 pound per acre) on August 30 and September 7.

At SMS, soil pH was adjusted to 6.5 with an application of lime at a rate of 1.5 tons per acre on April 16. Fertilization consisted of a preplant application on July 11 of 13-13-13, concentrated superphosphate, and muriate of potash. On August 13, pumpkins were sidedressed with  $\text{NH}_4\text{NO}_3$  at a rate of 90 pounds per acre. Insecticides used were Asana XL (at a rate of seven ounces per acre) on July 25, August 8, August 26, September 8, and September 17; and Sevin XLR (at a rate of one pint per acre) on August 1 and 18. Fungicides used were Bravo 720 (at a rate of 1.5 pints per acre) on August 15, August 22, August 29, September 5, and September 12; Ridomil (at a rate of 1.5 pounds per acre) on August 8, August 18, August 26, and September 8; and Benlate (at a rate of 0.25 pounds per acre) on August 1 and September 2.

At NAHS, preplant fertilization consisted of 120 pounds per acre of calcium nitrate [ $\text{Ca}(\text{NO}_3)_2$ ] applied on April 18. Herbicide used was Curbit (incorporated at a rate of 72

ounces per acre) on July 31. Insecticide used was Asana XL (at a rate of 9.6 ounces per acre) on July 17, August 1, August 13, August 22, and September 5. Fungicides used were Bravo 720 (at a rate of 48 ounces per acre) on July 17, August 1, August 13, August 22, September 5, and September 19; Benlate (at a rate of 0.25 pound per acre) on July 17; and Baleyton (at a rate of three ounces per acre) on August 13, August 22, and September 5.

Harvest dates were October 1 at EVSRC, October 21 at CAHS, October 22 at SMS, and October 7 at NAHS. Because color development stops after harvest, pumpkins were harvested at the full-color stage and graded as marketable or non-marketable (Tables 3 and 4).

In commercial plantings, closer spacing can be used than the spacing used in these trials because in these trials varieties with very different vining characteristics were in-

cluded together. Varieties with larger fruits tended to produce higher yields. However, large pumpkins may be worth \$1.00 each, while small ones may sell for \$0.10 each. Because small-fruited varieties (such as 'Sweetie Pie' or 'Jack-be-Quick') are very prolific (up to approximately 30 fruits per plant), they have similar or higher economical potential than the large fruited ones. The more varieties and diversity in types of pumpkins grown, the more attractive the farm will be.

The best varieties were 'Jumpin' Jack' (jumbo); 'Gold Rush' and 'Thomas Halloween' (large); 'Appalachian', 'Connecticut Field', and 'Howden' (medium); 'Autumn Gold', 'Spirit', and 'Wizard' (small); and 'Baby Bear', 'Oz', and 'Small Sugar' (desktop/pie). An Extension publication on recommended pumpkin and winter squash varieties for Alabama is currently in press.

**TABLE 2. SEED SOURCE, RELATIVE EARLINESS, AND FRUIT SIZE OF SELECTED PUMPKIN VARIETIES**

Variety <sup>1</sup>	Type <sup>2</sup>	Seed source	Maturity <sup>3</sup> (days)	Fruit weight (pounds)
Appalachian	F1	Rupp Seeds	90	20-25
Autumn Gold	F1	Sandoz Rogers	90	8-10
Baby Bear	OP	Rupp Seeds	105	1-2
Big Autumn	F1	Sandoz Rogers	90	15-20
Big Max	F1	Asgrow	120	35-50
Buckskin	F1	Rupp Seeds	100	15
Casper*	OP	Rupp Seeds	90	10-20
Cinderella**	OP	Vilmorin	95	20-30
Connecticut Field	OP	Rupp Seeds, Asgrow	115	15-25
Early Autumn	OP	Rupp Seeds	100	10-14
Fairytale	OP	Rupp Seeds	100	20-40
Frosty	F1	Stokes	90	10
Funny Face	OP	Rupp Seeds	100	10-12
Gold Rush	OP	Rupp Seeds	120	30-40
HMX 4695	F1	Harris Seeds	•	2-3
Howden	OP	Stokes, Harris, Rupp	100	15-20
Jack-Be-Quick	OP	Rupp Seeds	95	0.25
Jackpot	F1	Harris Seeds	100	10-12
Jumpin' Jack	OP	Rupp Seeds	120	30-50
Little Lantern	OP	Stokes	100	1-2
Lumina*	OP	Rupp Seeds, Stokes	90	10-15
Mother Lode	F1	Rupp Seeds	100	20-30
Oz	F1	Harris Seeds	105	3-5
Peek-A-Boo	F1	Rupp Seeds	90	3-4
Small Sugar	F1	Stokes, Asgrow	100	7
Spookie	OP	Harris Seeds	105	5-6
Spooktacular	F1	Petoseed	85	3-5
Sugar Treat	F1	Rupp Seeds	90	3-5
Sweetie Pie	OP	Stokes	110	0.25
Thomas Halloween	OP	SeedWay	110	16-35
Trick-or-Treat	F1	Petoseed	98	10-12
Var #300	F1	A&C	90	15-20
Var #500	F1	A&C	95	18-22
Var #510	F1	A&C	95	22-26
Wizard	F1	Harris Seeds	115	10-15

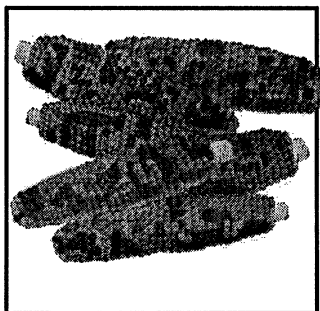
<sup>1</sup>Variety: \* = white-skinned varieties; \*\* also sold as 'Rouge Vif d'Etamps'.

<sup>2</sup>Type: F1 = hybrid; OP = open pollinated.

<sup>3</sup>Maturity: • = not found; from seed catalogues.

<b>TABLE 3. FIELD PERFORMANCE OF SELECTED PUMPKIN VARIETIES IN CENTRAL ALABAMA</b>						
Variety	Marketable yield lbs/a	Marketable fruits #/a	Culled yield lbs/a	Total yield lbs/a	Individual fruit wt. lb	
E.V. Smith Research Center						
Jackpot	21,382	1,544	3,430	24,812	14	
Buckskin	19,049	2,327	8,185	27,233	8	
Big Max	15,648	638	2,482	18,131	27	
Trick-or-Treat	15,188	1,457	4,389	19,577	10	
Cinderella	14,825	957	4,989	19,814	14	
Oz	13,341	4,067	781	14,122	3	
Casper	13,313	1,349	2,436	15,749	10	
Wizard	13,050	1,436	4,935	17,985	9	
Lumina	12,113	1,305	139	12,253	9	
Spooktacular	10,729	3,719	1,590	12,319	3	
Howden	10,592	805	5,444	16,036	13	
Frosty	10,362	1,240	7,630	17,992	9	
Small Sugar	10,353	3,524	2,068	12,421	3	
Sugar Treat	9,094	2,654	1,607	10,701	3	
Jumpin' Jack	8,391	566	3,656	12,047	15	
Baby Bear	6,486	4,916	850	7,336	1	
<i>R</i> <sup>2</sup>	<i>0.46</i>	<i>0.80</i>		<i>0.56</i>	<i>0.85</i>	
<i>CV</i>	<i>39</i>	<i>41</i>		<i>33</i>	<i>33</i>	
<i>lsd</i>	<i>7,395</i>	<i>1,305</i>		<i>7,917</i>	<i>4</i>	
Chilton Area Horticulture Substation						
Var #500	20,183	1,122	3,872	24,055	19	
Gold Rush	15,440	924	3,727	19,166	16	
Frosty	14,956	1,540	0	14,956	11	
Appalachian	14,230	1,012	1,742	15,972	13	
Jackpot	14,230	1,034	242	14,472	14	
Fairytale	13,891	924	968	14,859	15	
Jumpin' Jack	11,906	858	0	11,906	14	
Howden	9,390	660	2,130	11,519	14	
Var #510	8,712	594	194	8,906	15	
Var #300	8,518	792	2,033	10,551	11	
Connecticut Field	8,228	484	2,565	10,793	17	
Cinderella	7,502	616	290	7,792	16	
Mother Lode	7,405	462	1,888	9,293	16	
Big Autumn	5,082	572	194	5,276	9	
Jack-Be-Quick	1,452	4,708	0	1,452	0.25	
<i>R</i> <sup>2</sup>	<i>0.59</i>	<i>0.82</i>		<i>0.61</i>	<i>0.80</i>	
<i>CV</i>	<i>52</i>	<i>63</i>		<i>52</i>	<i>24</i>	
<i>lsd</i>	<i>12,487</i>	<i>1540</i>		<i>13,842</i>	<i>3</i>	

<b>TABLE 4. FIELD PERFORMANCE OF SELECTED PUMPKIN VARIETIES IN NORTH ALABAMA</b>						
Variety	Marketable yield lbs/a	Marketable fruits #/a	Culled Yield lbs/a	Total yield lbs/a	Individual fruit wt. lb	
North Alabama Horticulture Substation						
Fairy Tale	34,637	1,436	0	34,637	25	
Appalachian	33,713	2,828	0	33,713	15	
Early Autumn	32,001	2,915	0	32,001	11	
Connecticut Field	26,909	1,544	0	26,909	17	
Autumn Gold	22,737	2,762	0	22,737	8	
Thomas Halloween	22,555	1,653	0	22,555	13	
Spooktacular	21,350	4,067	0	21,350	7	
Peek-A-Boo	16,700	4,198	0	16,700	4	
Spookie	13,457	3,545	0	13,457	4	
HMX 4695	9,131	8,004	0	9,131	1	
Jack-Be-Quick	4,959	14,377	0	4,959	0.25	
Sweetie Pie	3,860	10,411	0	3,860	0.25	
<i>R</i> <sup>2</sup>	<i>0.55</i>	<i>0.89</i>		<i>0.50</i>	<i>0.75</i>	
<i>CV</i>	<i>51</i>	<i>0.38</i>		<i>51</i>	<i>55</i>	
<i>Isd</i>	<i>21,315</i>	<i>3,132</i>		<i>21,054</i>	<i>10</i>	
Sand Mountain Substation						
Funny Face	7,038	946	266	7,304	7	
Var #500	6,571	660	249	6,820	10	
Frosty	5,614	748	625	6,239	7	
Var #510	5,056	462	0	5,056	11	
Spooktacular	4,996	2,552	0	4,996	2	
Var #300	3,872	550	515	4,387	7	
Sugar Treat	3,736	1,276	0	3,736	3	
Jackpot	3,225	374	178	3,403	9	
Trick-or-Treat	2,743	418	167	2,911	6	
Oz	2,603	1,100	110	2,713	2	
Wizard	2,345	396	0	2,345	6	
Howden	2,042	220	0	2,042	9	
Jack-Be-Quick	1,558	4,400	0	1,558	0	
Little Lantern	1,074	682	0	1,074	2	
Baby Bear	141	132	0	141	1	
<i>R</i> <sup>2</sup>	<i>0.89</i>	<i>0.70</i>		<i>0.70</i>	<i>0.96</i>	
<i>CV</i>	<i>52</i>	<i>52</i>		<i>52</i>	<i>17</i>	
<i>Isd</i>	<i>1,104</i>	<i>3,879</i>		<i>4,092</i>	<i>7</i>	



## Ornamental Corn Varieties Evaluated in Isolation

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

An ornamental corn variety trial was conducted at the Horticulture Unit at the E.V. Smith Research Center (EVSRC) in Shorter (Tables 1 and 2).

Corn was direct seeded on bare ground in four-row plots, each 20 feet long, on April 9. Within-row spacing was six to eight inches and rows were 2.5 feet apart, which created a stand of approximately 26,000 plants per acre. To reduce chances of cross-pollination, varieties were planted in blocks of four replications and separated from other varieties by 300 feet. Cross-pollination affects kernel color.

Fertilization consisted of 20-10-20 at the rate of 500 pounds per acre on March 24 and 17-17-17 at the rate of 100 pounds per acre on March 27. Herbicides used were Sutan (at a rate of four pints per acre) and Atrazine (at a rate of two pints per acre) applied on May 6.

**TABLE 1. RATINGS OF 1997 ORNAMENTAL CORN VARIETY TRIAL<sup>1</sup>**

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

<sup>1</sup>See introduction for a description of rating scales.

Ears were allowed to dry on the plant and were harvested on August 4. Yield (Table 3) and ear characteristics (Table 4) were determined. All four selected varieties showed potential in Alabama.

**TABLE 2. SEED SOURCE AND FRUIT TYPE OF SELECTED ORNAMENTAL CORN VARIETIES**

Variety	Type	Seed source	Days to harvest	Ear length (inches)
Alabama Coschatta	Ornamental	Rupp Seeds	110	8-10
Mr. T	Ornamental	Rupp Seeds	95	5-8
Chinook	Ornamental	Rupp Seeds	90	5-7
Wampum	Ornamental	Rupp Seeds	95	4-6

**TABLE 3. FIELD PERFORMANCE OF SELECTED ORNAMENTAL CORN VARIETIES**

Variety	Yield lbs/a	Ear no. #/a	Stand <sup>1</sup> %	Plant height in	Ear set height in
Alabama Coschatta	4,967	32,373	109	88	34
Mr. T	3,487	55,917	97	75	28
Wampum	3,042	56,135	96	72	22
Chinook	1,631	33,463	78	50	13
<i>R</i> <sup>2</sup>	<i>0.83</i>	<i>0.84</i>		<i>0.70</i>	<i>0.70</i>
<i>CV</i>	<i>18</i>	<i>13</i>		<i>13</i>	<i>27</i>
<i>Isd</i>	<i>933</i>	<i>8,720</i>		<i>14</i>	<i>10</i>

<sup>1</sup>100% stand corresponds to 26,000 plants per acre.

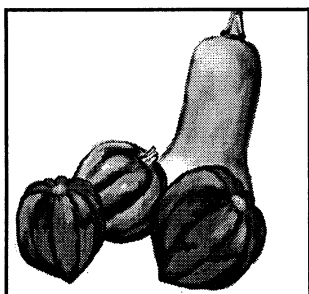


**TABLE 4. EAR CHARACTERISTICS OF SELECTED ORNAMENTAL CORN VARIETIES GROWN AT THE E.V. SMITH RESEARCH CENTER**

Variety	Quality rating <sup>1</sup>	Tip cover rating <sup>2</sup>	Ear fill rating	Eye appeal rating	Ear length in	Ear diameter in
Mr. T.	13.25	4.41	4.44	4.41	3.70	0.78
Wampum	12.84	4.19	4.44	4.22	3.76	0.77
Alabama Coshatta	12.38	4.50	3.63	4.25	6.79	1.13
Chinook	12.03	4.41	3.94	3.69	4.47	0.81
<i>R</i> <sup>2</sup>	<b>0.10</b>	<b>0.02</b>	<b>0.14</b>	<b>0.12</b>	<b>0.60</b>	<b>0.22</b>
<i>CV</i>	<b>13</b>	<b>20</b>	<b>17</b>	<b>20</b>	<b>16</b>	<b>21</b>
<i>lsd</i>	<b>3.3</b>	<b>2.0</b>	<b>1.2</b>	<b>2.3</b>	<b>1.3</b>	<b>0.34</b>

<sup>1</sup>Quality rating is the sum of tip cover, ear fill, and eye appeal ratings.

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



## Performance of Winter Squash Varieties on Black Plastic

Eric Simonne, Arnold Caylor, and Edgar Vinson

A winter squash variety trial was conducted at the North Alabama Horticulture Substation (NAHS) in Cullman (Tables 1 and 2). Selected varieties were planted on black plastic on May 10 on 20-foot-long plots. Within-row spacing was 1.5 feet.

Soils were fertilized according to the recommendations of the Auburn University Soil Testing Laboratory. Names of chemicals are mentioned only for describing the production practices used. This represents neither a recommendation nor an endorsement of these products. Current recommendations for pest and weed control in vegetable production in Alabama may be found in *IPM Commercial Vegetables: Insect, Disease, Nematode and Weed Control Recommendations* (Publication 97IPM-2 from the Alabama Cooperative Extension System).

Preplant fertilization consisted of an application of 500 pounds per acre of 15-0-0 on April 18. To control weeds between beds, Gramoxone F-45 (at a rate of three pints per acre) was applied on June 19. Insecticides used were Asana (at a rate of 9.6 ounces per acre) on June 19, July 11, and July 17; Adios (at a rate of 12 ounces per acre) on June 12; Sevin XLR (at a rate of one pint per acre) on June 27; and Phaser (at a rate of one quart per acre) on July 3.

Fungicides used were Bravo (at a rate of 48 ounces per acre) on July 3, 11, and 17; Ridomil/Bravo 81W (at a rate of three pounds per acre) on June 12; Dithane F-45 (at a rate of 77 ounces per acre) on June 19; Bravo Ultra (at a rate of three pints per acre) on June 27; Kocide (at a rate of two pounds per acre) on June 19 and July 3; and, Benlate (at a rate of 0.5 pound per acre) on June 27, July 3, July 11, and July 17.

TABLE 1. RATINGS OF 1997 WINTER SQUASH VARIETY TRIAL<sup>1</sup>

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

<sup>1</sup>See introduction for a description of rating scales.

All varieties were once-over harvested on August 19 (Table 3). Black plastic was used in this test to better control weeds and fertilizer applications. However, bare ground is the more traditional method for winter squash production. 'XPH 1755' (green acorn, from Asgrow) showed good potential. Some early fruits tended to have a round blossom end rather than a pointed one as found in other acorn varieties. Best varieties were 'Butternut Supreme' and 'Ultra Butternut' (butternut); 'Vegetable Spaghetti' (spaghetti); green 'Tay Belle' and white 'Swan White Acorn' (acorn); and green 'Hubbard Improved Green' and yellow 'Golden Hubbard' (hubbard). An Extension publication on recommended pumpkin and winter squash varieties for Alabama is currently in press.

**TABLE 2. SEED SOURCE, FRUIT TYPE, RELATIVE EARLINESS, AND GROWTH HABIT OF SELECTED WINTER SQUASH VARIETIES**

Variety	Type <sup>1</sup>	Description	Seed source	Days to harvest <sup>2</sup>	Growth habit
Hubbard Improved Green	OP	Hubbard	Stokes	120	Vining
Tay Belle	F1	Bush Acorn	Stokes,Asgrow	68	Erect
Sweet Mama	F1	Buttercup	Stokes	75	Semi-Erect
Golden Hubbard	OP	Hubbard	Stokes	90	Vining
Vegetable Spaghetti	OP	Spaghetti	Stokes	70	Vining
Early Butternut	F1	Butternut	Stokes	75	Semi-Erect
Golden Delicious	OP	Novelty	Stokes	100	Vining
Sweet Dumpling	OP	Sweet Potato	Stokes	100	Vining
Ultra Butternut	F1	Butternut	SeedWay	90	Vining
Butternut Supreme	F1	Butternut	Stokes	97	Vining
Tivoli	F1	Spaghetti	Sakata	90	Erect
Carnival	F1	Novelty	Harris Seeds	90	Erect
XPH 1755	F1	Acorn	Asgrow	•	Semi-Erect
Nicklow's Delight	F1	Butternut	Solar Seeds	•	Vining
Waltham Butternut	OP	Butternut	Asgrow,Stokes	90	Vining

<sup>1</sup>Type: F1 = hybrid; OP = open pollinated; from seed catalogues.

<sup>2</sup>Days to harvest: • = not found.

**TABLE 3. FIELD PERFORMANCE OF SELECTED WINTER SQUASH VARIETIES AT THE NORTH ALABAMA HORTICULTURE SUBSTATION**

Variety	Marketable weight lbs/a	Marketable fruits #/a	Individual fruit weight lbs	Stand <sup>1</sup> %
Vegetable Spaghetti	86,928	33,027	2.7	73
Ultra Butternut	80,442	31,610	2.5	90
Hubbard Improved Green	58,669	7,521	7.5	79
Nicklow's Delight	54,631	40,875	1.3	92
Butternut Supreme	53,486	35,425	1.5	94
Tivoli	42,521	17,658	2.4	90
Tay Belle	41,366	26,814	1.5	92
Golden Delicious	38,760	5,123	6.8	83
XPH 1755	35,529	20,928	1.7	94
Early Butternut	34,880	32,046	1.1	85
Waltham Butternut	33,103	25,615	1.3	94
Carnival	32,493	33,463	1.0	88
Golden Hubbard	30,874	5,777	5.1	60
Sweet Dumpling	18,497	21,473	0.9	56
Sweet Mama	10,404	5,377	2.3	28
<i>R</i> <sup>2</sup>	<i>0.64</i>	<i>0.80</i>	<i>0.80</i>	<i>0.70</i>
<i>CV</i>	<i>18</i>	<i>49</i>	<i>39</i>	<i>29</i>
<i>Isd</i>	<i>24,466</i>	<i>9,677</i>	<i>1.9</i>	<i>22</i>

<sup>1</sup>100% stand corresponds to 5,700 plants per acre.



## Results of 1997 Southernpea Southern Cooperative Trials

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

Observational and replicated southernpea cooperative trials were conducted at the Horticulture Unit at the E.V. Smith Research Center (EVSRC) near Shorter (Table 1). These breeders' trials evaluate the potential of cultigens not yet released for commercial production. Results of these trials are of interest primarily to the breeders; however, the new varieties of Southernpea are usually developed from these trials.

Selected cultigens of southernpeas were planted onto two-row, 20-foot-long plots at a one-foot within-row spacing. Rows were 2.5 feet apart. Check varieties were 'Coronet' and 'Pink Eye Purple Hull BVR' (both pinkeyes), 'Arkansas #1' (blackeye), 'Early Acre' (cream), and 'Mississippi Silver' (crowder).

One ton of lime per acre was used to raise the pH to 6.5. Preplant fertilizer was 30-50-50 at the recommended rate. Plants were irrigated as needed with drip irrigation. Southernpeas were planted on June 9 and harvested as needed between August 6 and August 21. Each plot was

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

<sup>1</sup>See introduction for a description of rating scales.

once-over harvested when 50% of the pods were dry. Dry and imbibed yields were determined (Tables 2 and 3).

To estimate yield and compensate for different percentages of dry and mature green pods among the plots, all peas shelled from each plot's harvest were placed into containers with water to allow the dry peas to soak up water (imbibe) overnight. This step makes comparisons more realistic since all peas are then at the same moisture level.

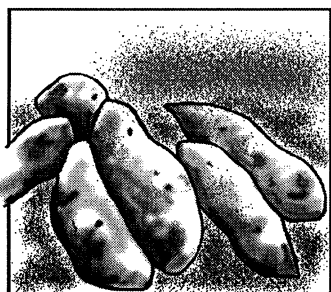
TABLE 2. YIELD OF 1997 OBSERVATIONAL SOUTHERNPEA TRIAL AT THE E.V. SMITH RESEARCH CENTER<sup>1</sup>

Variety	Days to harvest	Number of harvests	Hand shellout %	In-pod yield lbs/a	Imbibed shelled yield lbs/a
Mississippi Silver	58	1	58	2,516	2,149
AR-92-674	58	1	50	1,524	1,029
US-880	58	1	42	1,045	725
Coronet	58	1	48	905	666
AR-95-306	58	1	63	895	829
Early Acre	58	1	37	796	350
AR-95-195	58	1	51	716	579
US-881	58	1	43	712	337
AR-96-918	58	1	33	700	342
AR-95-105	58	1	37	650	296
Pink Eye Purple Hull BVR	58	1	38	624	362
AR-91-333	58	1	51	546	487
AR-95-368	58	1	45	475	446
AR-95-104	58	1	34	400	187

<sup>1</sup>Statistical parameters—R<sup>2</sup>, CV, and lsd—cannot be evaluated on data from observational trials.

TABLE 3. YIELD OF 1997 REPLICATED SOUTHERPEA TRIAL AT THE E. V. SMITH RESEARCH CENTER

Variety	Days to harvest	Number of harvests	Hand shellout %	In-pod yield lbs/a	Imbibed shelled yield lbs/a
White Acre	69	1	50	1,623	1,108
US-867	60	1	44	1,445	819
AR-92-551	58	1	46	1,318	715
US-865	60	1	40	1,107	530
TX1-21-8-4-OOPE	60	1	47	1,065	657
AR-92-552	58	1	49	964	774
Coronet	58	1	48	905	666
TX1-21-8-30-10PE	61	1	40	791	453
AR-87-435-68	58	1	45	722	573
TX1-21-5-OOPE	60	1	41	474	298
AR-92-574	58	1	44	639	487
Pink Eye Purple Hull BVR	58	1	38	624	362
Arkansas #1	58	1	52	497	409
<i>R</i> <sup>2</sup>				<b>0.50</b>	<b>0.50</b>
<i>CV</i>				<b>44</b>	<b>48</b>
<i>lsd</i>				<b>588</b>	<b>293</b>



## 'L-89-110' Sweetpotato Could be Released in 1999

Eric Simonne, Jim Bannon, Robert Boozer, Jason Burkett, Arnold Caylor, and Jim Pitts

National sweetpotato collaborators' trials were conducted at the E.V. Smith Research Center (EVSRC) near Shorter, the Chilton Area Horticulture Substation (CAHS) in Clanton, and the North Alabama Horticulture Substation (NAHS) in Cullman (Table 1).

The evaluation of some breeding lines that were new in 1997 was restricted by slip production. As recommended by the collaborators' group, 'Beauregard' and 'Jewel' were used as checks. Although released in 1996, 'Carolina Rose' and 'Carolina Ruby' were included in 1997 trials to familiarize Alabama growers with these varieties.

Sweetpotato seed roots from selected commercial varieties and breeding lines were planted in a heated bed at NAHS on April 10 for slip production. On May 20, slips were removed from the beds as needed and bundled for shipment to the locations of the trials. For some new entries, the amount of slips produced was not sufficient for all three locations. At all locations, varieties were replicated four times. Plots contained two rows that were 30 feet long and 3.5 feet wide. Within-row spacing was one foot.

At EVSRC, preplant fertilization consisted of a broadcast application of 20-0-20 at a rate of 400 pounds per acre on June 4. Devrinol 50DF herbicide was applied (at a rate of three pounds per acre) on June 13. Planting date was June 13. On June 18, sweetpotatoes were sidedressed with 60 pounds of N per acre as ammonium nitrate ( $\text{NH}_4\text{NO}_3$ ). Overhead irrigation was applied as needed.

At CAHS, 40 pounds of N,  $\text{P}_2\text{O}_5$ , and  $\text{K}_2\text{O}$  were preplant applied on June 12. Slips were transplanted on June 13. Temik nematicide (at a rate of 15 pounds per acre) and Command 3E herbicide (at a rate of 1.25 quart per acre) were applied on June 13. No irrigation was necessary.

At NAHS,  $\text{NH}_4\text{NO}_3$  was broadcast applied at a rate of 200 pounds of N per acre on June 22. Slips were transplanted on June 26. Weed control was provided by an application of Devrinol 50DF (at a rate of four pounds per acre) on June 26. No irrigation was used.

TABLE 1. RATINGS OF 1997 SWEETPOTATO VARIETY TRIALS<sup>1</sup>

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

<sup>1</sup>See introduction for a description of rating scales.

Sweetpotatoes were harvested on October 14 at EVSRC, October 8 at CAHS, and October 20 at NAHS. Roots were graded as US#1 (roots 2 to 3.5 inches in diameter, three to nine inches in length, well shaped and free of defects), canner (roots one to two inches in diameter, two to seven inches in length), jumbo (roots that exceed the diameter, length, and weight requirements of the US#1 grade, but that are of marketable quality), or cull (roots at least one inch in diameter but so misshapen or unattractive that they could not be classified as marketable roots). Marketable yield was calculated by adding the yields of the US#1, canner, and jumbo grades. Percent US#1 was calculated by dividing the yield of the US#1 grade by the marketable yield (Table 2).

Dispositions for 1997 entries were to drop 'MS-D45', and keep 'L-94-75', 'L-94-96', 'NC-93-17', 'W-287,' and 'W-317'. New entries for 1998 will be 'L-95-95' and 'W-337'. A request has been made to release 'L-89-110'.

**TABLE 2. YIELD AND GRADE DISTRIBUTION OF SELECTED SWEETPOTATO BREEDING LINES AND CULTIVARS**

Variety	US#1 bu/a <sup>1</sup>	Canner bu/a	Jumbo bu/a	Cull bu/a	Total market <sup>2</sup> bu/a	US#1 <sup>3</sup> %
E.V. Smith Research Center						
Beauregard	374	98	75	92	547	69
Carolina Rose	261	51	151	161	463	55
L-89-110	245	50	70	125	365	67
Carolina Ruby	221	57	96	188	373	59
NC-93-17	201	141	7	256	349	58
Jewel	186	59	42	206	288	64
<i>R</i> <sup>2</sup>	<b>0.37</b>	<b>0.48</b>	<b>0.61</b>	<b>0.40</b>	<b>0.35</b>	<b>0.35</b>
<i>CV</i>	<b>38</b>	<b>49</b>	<b>50</b>	<b>43</b>	<b>34</b>	<b>13</b>
<i>lsd</i>	<b>154</b>	<b>79</b>	<b>69</b>	<b>159</b>	<b>351</b>	<b>17</b>
Chilton Area Horticulture Substation						
Beauregard	305	127	83	108	515	59
L-89-110	259	156	46	113	461	54
Carolina Ruby	218	170	27	175	415	52
Carolina Rose	184	156	20	85	360	51
Jewel	97	138	14	99	250	40
NC-93-17	95	163	2	157	260	32
<i>R</i> <sup>2</sup>	<b>0.55</b>	<b>0.20</b>	<b>0.62</b>	<b>0.27</b>	<b>0.59</b>	<b>0.42</b>
<i>CV</i>	<b>43</b>	<b>24</b>	<b>75</b>	<b>49</b>	<b>26</b>	<b>27</b>
<i>lsd</i>	<b>207</b>	<b>58</b>	<b>39</b>	<b>76</b>	<b>97</b>	<b>22</b>
North Alabama Horticulture Substation						
W-317	441	314	0	180	755	58
L-94-75	401	421	64	24	885	45
L-94-96	281	526	0	112	807	35
L-89-110	229	106	49	52	384	59
MS-D45	209	156	38	59	403	51
Beauregard	197	160	27	29	385	51
NC-C75	190	165	49	113	404	46
NC-C59	157	100	32	86	289	56
Jewel	137	167	3	40	307	41
NC-93-17	125	122d	3	83	251	50
W-287	49	38	0	59	87	57
<i>R</i> <sup>2</sup>	<b>0.63</b>	<b>0.89</b>	<b>0.52</b>	<b>0.50</b>	<b>0.76</b>	<b>0.34</b>
<i>CV</i>	<b>37</b>	<b>25</b>	<b>85</b>	<b>61</b>	<b>29</b>	<b>21</b>
<i>lsd</i>	<b>92</b>	<b>103</b>	<b>59</b>	<b>121</b>	<b>480</b>	<b>29</b>

<sup>1</sup>bu = 40-lb bushels.

<sup>2</sup>Total market: calculated by adding US#1, canner, and jumbo.

<sup>3</sup>Percent US#1: calculated by dividing the weight of US#1 by the total marketable weight (Culls not included).

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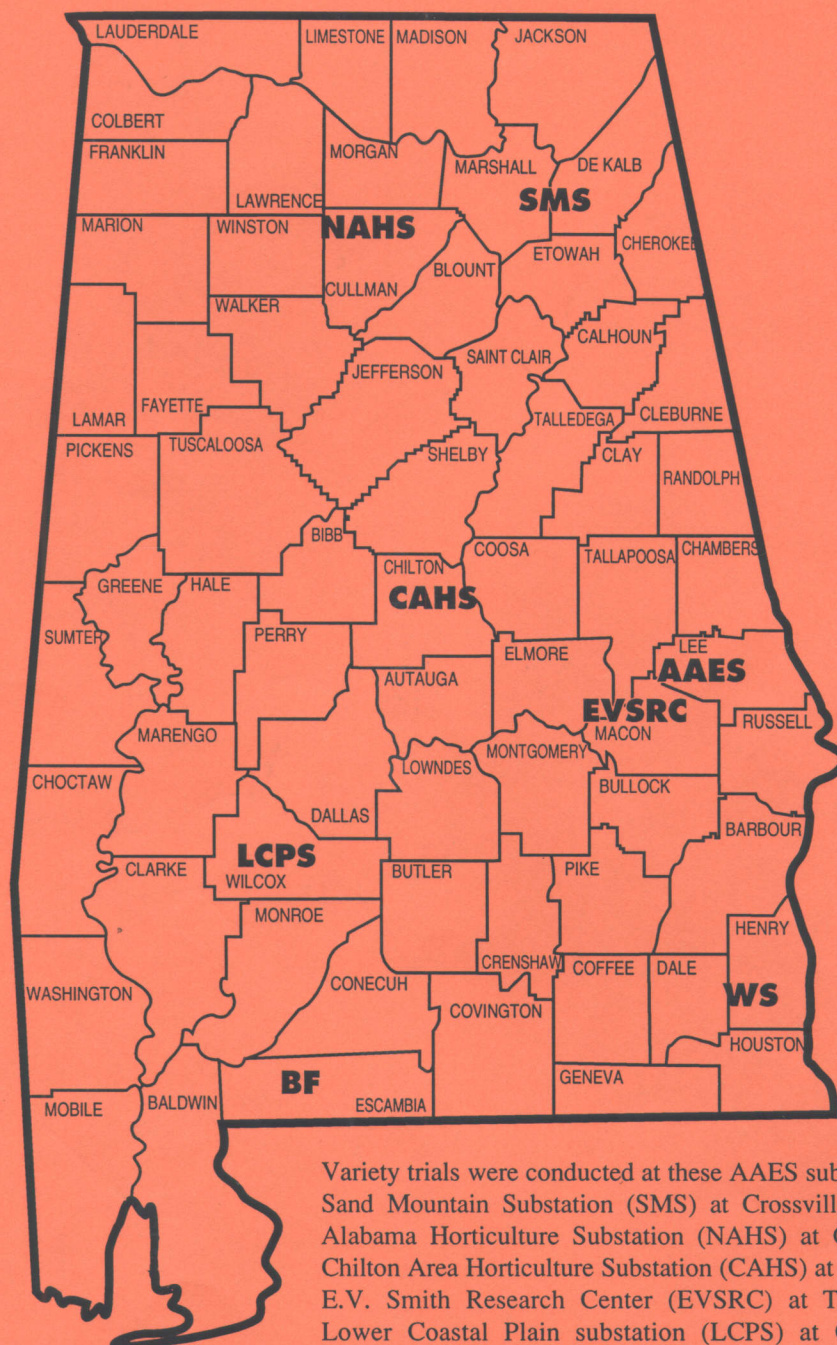
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## Location of Participating Research Units



Variety trials were conducted at these AAES substations: Sand Mountain Substation (SMS) at Crossville, North Alabama Horticulture Substation (NAHS) at Cullman, Chilton Area Horticulture Substation (CAHS) at Clanton, E.V. Smith Research Center (EVSRC) at Tallassee, Lower Coastal Plain substation (LCPS) at Camden, Wiregrass Substation (WS) at Headland, Brewton Experiment Field (BF) at Brewton, and Main Agricultural Experiment Station (AAES) at Auburn. Without the commitment of the substation personnel, results presented in this report would not have been presented in a timely manner.