

# Fall 1996 Commercial Vegetable Variety Trials





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# Introduction:

## *Tips to Interpret Results*

### *on Vegetable Variety Performance*

ERIC SIMONNE

The expansion of the vegetable industry in Alabama particularly relies upon the usage of well-adapted, high-yielding varieties with desirable characteristics and quality (Table 1). The importance of variety selection cannot be over emphasized: effective marketing begins with variety selection.

The main purpose of vegetable variety evaluation is to provide growers and seed retailers with practical information on varieties and assist them in selecting a "good" variety. Here are a few tips to get the most out of vegetable variety trials 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 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, one growing location cannot be compared to another 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) 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 most of the variability observed was mainly due to the effect of variety and replication. Random, uncontrolled errors were of lesser importance. CV is an expression of yield variability relative to yield mean. Low CVs are desirable (under 20%), 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. 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 1996 cabbage trial conducted at the Brewton Experiment Field, 'Bravo' yielded 16,497 pounds per acre, while 'CB-7' and 'Cheers' yielded 16,464 and 11,543 pounds per acre, respectively. Since there was less than a 1,002 difference between 'Bravo' and 'CB-7', there is no statistical difference between these two varieties. However, the yield difference between 'Bravo' and 'Cheers' was 4,954, indicating that

TABLE 1. VEGETABLE ACREAGE SUMMARY FOR ALABAMA (1990-1994)<sup>1</sup>

Crop	1990	1991	1992	1993	1994
Broccoli .....	30	20	160	170	140
Cantaloupe .....	1,900	1,930	2,080	2,100	2,110
Collards .....	2,180	1,840	2,180	2,050	2,030
Cabbage .....	880	450	930	710	590
Cucumber .....	420	560	820	350	1,180
Irish Potato .....	13,550	8,500	11,770	11,160	10,680
Lima Bean .....	1,450	1,500	1,730	1,440	1,790
Okra .....	1,530	1,120	880	870	1,350
Bell Pepper .....	270	490	840	290	440
Pimento Pepper .....	630	700	750	490	400
Snap Bean .....	1,750	1,390	1,550	1,400	1,550
Southernpea .....	5,120	4,640	4,580	4,890	4,860
Summer Squash					
(Yellow) .....	1,300	1,250	1,480	1,440	1,360
Sweet Corn .....	4,380	3,130	5,350	5,490	5,770
Sweetpotato .....	6,350	4,330	6,130	6,340	6,420
Tomato .....	4,590	5,070	4,070	3,830	4,110
Watermelon .....	9,600	11,040	12,820	13,080	10,870
Zucchini Squash .....	40	40	110	100	180
Total .....	55,970	48,000	58,230	56,200	55,830

<sup>1</sup>Data are from Alabama Vegetable Production Statistics 1989-1994, by Alabama Department of Agriculture and Industries in cooperation with Alabama Agricultural Statistics Service and the Alabama Cooperative Extension Service. Data since 1995 are not available.

TABLE 2. SOIL TYPES AT THE TRIAL LOCATIONS

Location	Water-holding capacity <i>in./in.</i>	Soil type
Gulf Coast Substation (Fairhope) .....	0.09-0.19	Malbis fine sandy loam
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
Piedmont Substation (Camp Hill) .....	0.12-0.14	Appling-Durham sandy loam
Chilton Area Horticulture Substation (Clanton) .....	0.13-0.15	Luverne sandy loam
Upper Coastal Plain Substation (Winfield) .....	0.13-0.20	Savannah loam
North Alabama Horticulture Substation (Cullman) .....	0.16-0.20	Hartsells-Albertville fine sandy loam
Sand Mountain Substation (Crossville) .....	0.16-0.18	Wynnvilville fine sandy loam

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 2), 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 1-5 scale, based on weather conditions, fertilization, irrigation, pest pressure and overall performance (Table 3). Results from trials with ratings of 2 and under are not reported. These numbers may be used to interpret differences in performance from location to location. The overall rating may be used to give more importance to

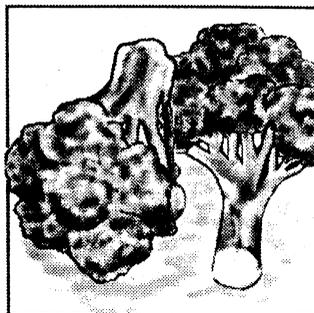
the results of variety performance under good growing conditions.

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

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 3. 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



## 'Packman' Again Among Top Broccoli Varieties

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Broccoli variety trials were conducted using plastic mulch and drip irrigation at the Brewton Experiment Field (BEF) in Brewton, Wiregrass Substation (WS) in Headland, Horticulture Unit of the E.V. Smith Research Center (EVSRC) in Shorter, Chilton Area Horticulture Substation (CAHS) in Clanton, and Sand Mountain Substation (SMS) in Crossville (Tables 1 and 2). Broccoli was evaluated as a first crop at BEF, WS, and SMS and as a second crop at EVSRC and CAHS (Table 3).

Fertilization was done 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 96IPM-2 from the Alabama Cooperative Extension System).

At BEF, 900 pounds of 13-13-13 were preplant incorporated on Sept. 5. On Sept. 9, beds were fumigated using 98% Methyl Bromide and 2% Chloropicrin at a rate of 200 pounds per acre. Seedlings were transplanted on Sept. 19. Fertilization (per acre) consisted of injections of 15 pounds of N as calcium nitrate [ $\text{Ca}(\text{NO}_3)_2$ ] on Oct. 7, Oct. 22, and Nov. 5 and as potassium nitrate ( $\text{KNO}_3$ ) on Oct. 15, Oct. 28, and Nov. 12.

Insect control consisted of applications of Dipel (at a rate of 1.5 pints per acre) applied on Oct. 17, Oct. 23 and Nov. 20; Sevin XLR (at a rate of one quart per acre) on Nov. 27; Larvin (at a rate of two pints per acre) on Oct. 2, Oct. 11, Oct. 17, Oct. 23, and Nov. 5. Fungicides used were Bravo 720 (at a rate of 1.5 pints per acre) on Oct. 2, Oct. 11, Oct. 17, Oct. 23, Nov. 5, and Nov. 27; and Kocide 101 (at a rate of two pounds per acre) on Nov. 20.

At WS, 500 pounds of 13-13-13 and two tons of broiler litter were preplant broadcast (per acre) on Aug. 13. Plastic was laid on Aug. 14 and broccoli was transplanted on Sept. 11. Six and a half pounds of N as  $\text{KNO}_3$  were injected on Sept. 17, Oct. 1, Oct. 8, Oct. 14, Oct. 17, Oct. 23, Nov. 7, Nov. 14, and Nov. 21. Pest control consisted of applications of Asana XL (insecticide, at a rate of nine ounces per acre) and Bravo 720 (fungicide, at a rate of three pints per acre) on Sept. 17, Sept. 23, Oct. 9, and Oct. 31.

TABLE 1. RATINGS OF 1996 BROCCOLI VARIETY TRIALS<sup>1</sup>

Location	BEF	WS	EVSRC	CAHS	SMS
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 .....	5	5	5	5	5

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

At SMS, one ton of dolomitic limestone and 300 pounds of 13-13-13 were preplant broadcast applied on Aug. 23 and 26, respectively. Ten pounds of N as 20-20-20 were injected on Sept. 23, Oct. 7, and Oct. 25. Injections of 14 pounds of N as  $\text{Ca}(\text{NO}_3)_2$  were made on Oct. 1 and 17; and an injection of six pounds of N as  $\text{KNO}_3$  was made on Oct. 11. Pest control consisted of applications of Sevin (insecticide at a rate of one pint per acre) on Sept. 12, Sept. 20, Sept. 25, and Oct. 17; Asana XL (insecticide) at a rate of six ounces per acre on Oct. 2 and 4, and at a rate of nine ounces per acre on Oct. 11 and 24; and Bravo 720 (fungicide, at a rate of one pint per acre) on Sept. 20.

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

Variety	Type <sup>1</sup>	Seed source	Earliness	Disease claims <sup>2</sup>
Arcadia .....	F1	Sakata	86	DM
Barbados .....	F1	Ferry-Morse	62	—
Claudia .....	F1	Ferry-Morse	70	DM
Eureka .....	F1	Stokes	87	BR, DM
Excelsior .....	F1	Harris	—	—
Gallant .....	F1	Sakata	—	—
Galeon .....	F1	Petoseed	75	—
Greenbelt .....	F1	Sandoz Rogers/Sakata	75	—
Green Comet .....	F1	Takii	75	—
Landmark .....	F1	Takii	66	—
Legend .....	F1	Sakata	85	DM
Mariner .....	F1	Petoseed	77	BLS, DM
Olympus .....	F1	Takii	—	—
Packman .....	F1	Petoseed/Stokes	78	—
Paragon .....	F1	Stokes	75	—
Pinnacle .....	F1	Takii	68	DM
Premium Crop .....	F1	Takii/Stokes	82	DM

<sup>1</sup>F1 = hybrid.

<sup>2</sup>DM = downy mildew; BR = black rot; BLS = bacterial leaf spot; and — = not available.

**TABLE 3. CROPPING SYSTEMS  
USED IN BROCCOLI EVALUATION**

Location	Plastic color	No. rows/bed	No. drip tapes/bed	Stand	Previous crop
BEF .....	Black	2	1	18,000	None
WS .....	White	3	2	27,000	None
EVSRC .....	White	3	2	27,000	Muskmelon
CAHS .....	Black	2	1	18,000	Muskmelon
SMS .....	Black	3	2	27,000	None

At EVSRC, cantaloupe vines from the spring crop were mowed in August and new holes were punched for broccoli establishment. Fertilization consisted of injections of six pounds of N per acre, from a liquid  $\text{Ca}(\text{NO}_3)_2$  solution (9-0-0-11) on Sept. 11, and 20 pounds per acre on Sept. 25 and Oct. 9. A 20-20-20 fertilizer was injected on Sept. 18, Oct. 1, and Oct. 15 at a rate of 14 pounds of N per acre. Insect control consisted of applications of Dipel (one pound per acre) on Sept. 11, Sept. 25, Oct. 3, Oct. 9, and Oct. 15; Diazinon AG500 (two quarts per acre) on Sept. 11; and, Asana XL (eight ounces per acre) on Sept. 18.

At CAHS, cantaloupe vines from the spring crop were sprayed with Gramoxone (one quart per acre) and mowed in August. Fertilization consisted of weekly injections of approximately 10 pounds of N per acre from ammonium nitrate ( $\text{NH}_4\text{NO}_3$ ) and  $\text{KNO}_3$ . A total of 112 pounds of N per acre was injected.

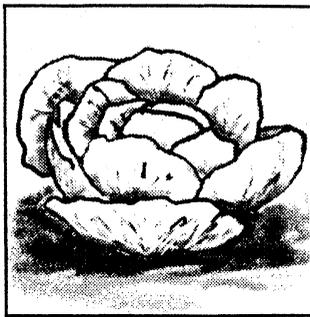
Pest control consisted of applications of Lannate (insecticide, two pints per acre) applied on Sept. 23, Sept. 30, Oct. 3, Oct. 5, and Oct. 28; Benlate (fungicide, 0.5 pounds per acre) and Captan (fungicide, five pounds per acre) on Sept. 16; Ridomil/ Bravo (fungicide, two pints per acre); and, Bravo (at a rate of two pounds per acre) on Oct. 15.

Broccoli heads were harvested when they reached six inches in diameter. Harvest dates were Nov. 18, Nov. 25, Dec. 2, and Dec. 9 at BEF; Nov. 1, 5, 7, and 15 at WS; Nov. 5, 7, 15, 18, 22, and 27 at EVSRC; Nov. 20, Nov. 27, and Dec. 6 at CAHS; and Nov. 20, Nov. 27, and Dec. 6 at SMS. Marketable weight (in numbers of 23-pound cartons) and corresponding number of heads were recorded (Table 4).

**TABLE 4. FIELD PERFORMANCE OF BROCCOLI VARIETIES IN SOUTH ALABAMA <sup>1</sup>**

Variety	Marketable 23-lb. cartons	Marketable yield	Marketable heads	Variety	Marketable 23-lb. cartons	Marketable yield	Marketable heads
	<i>no./a.</i>	<i>lb./a.</i>	<i>no./a.</i>		<i>no./a.</i>	<i>lb./a.</i>	<i>no./a.</i>
<b>Brewton Experiment Field</b>				<b>E.V. Smith Research Center (continued)</b>			
Gallant .....	208	4,780	15,260	Olympus .....	202	4,654	12,847
PSX 10990 .....	198	4,556	12,099	Excelsior .....	197	4,529	12,847
Packman .....	196	4,502	13,843	Gallant .....	193	4,436	13,065
Premium Crop .....	182	4,175	13,298	Green Comet .....	157	3,612	6,750
Green Comet .....	167	3,842	12,535	<i>R</i> <sup>2</sup> .....		0.47	0.62
Landmark .....	149	3,434	10,028	<i>CV</i> .....		25	26
Pinnacle .....	122	2,812	11,118	<i>lsd</i> .....		2,185	5,126
Greenbelt .....	116	2,676	8,284	<b>Chilton Area Horticulture Substation</b>			
<i>R</i> <sup>2</sup> .....		0.62	0.69	Packman .....	142	3,270	14,170
<i>CV</i> .....		18	13	Olympus .....	133	3,052	13,734
<i>lsd</i> .....		1,002	2,332	Paragon .....	127	2,910	13,516
<b>Wiregrass Substation</b>				PSX 10990 .....	124	2,856	13,625
Premium Crop .....	252	5,795	37,620	Green Comet .....	101	2,333	15,805
Packman .....	237	5,447	45,463	Mariner .....	86	1,984	13,298
Galeon .....	224	5,156	45,754	Legend .....	73	1,668	13,298
PSX 10990 .....	217	4,982	24,112	Barbados .....	49	1,123	13,516
Legend .....	177	4,067	24,547	Arcadia .....	32	741	10,900
Paragon .....	174	3,994	31,810	Eureka .....	30	698	10,137
Landmark .....	155	3,573	22,223	<i>R</i> <sup>2</sup> .....		0.88	0.64
Barbados .....	144	3,312	21,352	<i>CV</i> .....		19	10
Greenbelt .....	133	3,065	18,883	<i>lsd</i> .....		578	1,883
Eureka .....	110	2,527	16,994	<b>Sand Mountain Substation</b>			
Pinnacle .....	110	2,527	19,609	Packman .....	189	4,358	18,883
Arcadia .....	99	2,280	19,609	Olympus .....	177	4,067	18,302
<i>R</i> <sup>2</sup> .....		0.64	0.74	Paragon .....	169	3,878	18,011
<i>CV</i> .....		26	25	PSX 10990 .....	165	3,806	18,156
<i>lsd</i> .....		1,435	9,734	Green Comet .....	135	3,108	21,061
<b>E.V. Smith Research Center</b>				Mariner .....	115	2,644	17,721
Mariner .....	334	7,672	19,380	Legend .....	97	2,222	17,721
Landmark .....	324	7,444	17,202	Barbados .....	65	1,496	18,011
Legend .....	302	6,944	19,598	Arcadia .....	43	988	14,525
Galeon .....	252	5,799	14,372	Eureka .....	40	930	13,508
Packman .....	242	5,555	7,404	<i>R</i> <sup>2</sup> .....		0.87	0.64
Greenbelt .....	235	5,406	12,412	<i>CV</i> .....		19	10
Claudia .....	224	5,152	14,154	<i>lsd</i> .....		578	1,883

<sup>1</sup>See the introduction for information on interpreting the statistical analysis — *R*<sup>2</sup>, *CV*, and *lsd*.



# ‘Bravo,’ ‘Cheers,’ and ‘Wanda’ Perform Well in Cabbage Trial

ERIC SIMONNE, RANDY AKRIDGE, ARNOLD CAYLOR, AND JOE KEMBLE

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

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 96IPM-2 from the Alabama Cooperative Extension System).

At both locations, six-week-old cabbage was transplanted in staggered, double rows 12 inches apart at an in-row spacing of 12 inches. Beds were five feet apart. Plots were 20 feet long and contained 40 plants, which created a stand of approximately 18,000 plants per acre. Transplanting dates were Sept. 19 at BEF and Sept. 23 at NAHS.

At BEF, 900 pounds-per-acre of 13-13-13 were preplant incorporated on Sept. 5. On Sept. 9, beds were fumigated with 98% Methyl Bromide and 2% Chloropicrin at a rate of 200 pounds per acre. Fertilization consisted of 15 pounds per acre of N injected as calcium nitrate [Ca(NO<sub>3</sub>)<sub>2</sub>] on Oct. 7, Oct. 22, and Nov. 5, and as potassium nitrate (KNO<sub>3</sub>) on Oct. 15, Oct. 28, and Nov. 12.

Insect control consisted of applications of Dipel (at a rate of 1.5 pints per acre) applied on Oct. 17, Oct. 23, and Nov. 20; Sevin XLR (at a rate of one quart per acre) on Nov. 27; Larvin (at a rate of two pints per acre) on Oct. 2, Oct. 11, Oct. 17,

Location	BEF	NAHS
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.

Oct. 23, and Nov. 5. Fungicides used were Bravo 720 (at a rate of 1.5 pints per acre) on Oct. 2, Oct. 11, Oct. 17, Oct. 23, Nov. 5, and Nov. 27; and Kocide 101 (at a rate of two pounds per acre) on Nov. 20.

At NAHS, 500 pounds of 13-13-13 were applied on Sept. 11. Between Sept. 19 and Nov. 1, cabbage plants

Variety	Type <sup>1</sup>	Head color	Seed source	Days to harvest	Disease claims <sup>2</sup>
<b>Head Cabbage</b>					
Atlantis .....	F1	Green	Petoseed	—	—
Blue Gem .....	F1	Green	Harris Seeds	70	FY, BR
Blue Thunder .....	F1	Green	Harris Seeds	80	FY, BR
Blue Vantage .....	F1	Green	Sakata	90	FY, BR, TB
Bravo .....	F1	Green	Harris Seeds	85	FY, BR
Cheers .....	F1	Green	Takii	75	BR, FY
Early Marvel .....	OP	Green	Stokes	95	none
Fortress .....	F1	Green	Ferry-Morse	99	BR, FY
Green Cup .....	F1	Green	Takii	82	BR, FY
Greenstart .....	F1	Green	Stokes	85	none
Pacifica .....	F1	Green	Sakata	93	FY, BR, TB
Quick Start .....	F1	Green	Takii	—	—
Royal Vantage .....	F1	Green	Sakata	88	BLS, BR, FY, TB
Survivor .....	F1	Green	Stokes	85	BR, FY
Tristar .....	F1	Green	SeedWay	95	BR, FY
Wanda .....	F1	Green	Nunhems	—	—
<b>Oriental Cabbage</b>					
China Flash .....	F1	Napa	Sakata	78	TB
Kasumi .....	F1	Napa	Stokes	74	—
Pak Choi-Lei Choi .....	OP	Pakchoi	Sandoz Rogers	77	—
Shinki .....	F1	Napa	Takii	75	—
Summertime II .....	F1	Napa	Stokes	67	ALS, DM, WS
Yuki .....	F1	Napa	Sakata	67	CR

<sup>1</sup>F1 = hybrid; OP = open pollinated.  
<sup>2</sup>FY = fusarium yellows; BR = black rot; TB = tip burn; BLS = bacterial leaf spot; ALS = alternaria leaf spot; WS = white spot; DM = downy mildew; CR = club root; and — = not available.

were weekly fertilized with injections alternatively from ammonium nitrate ( $\text{NH}_4\text{NO}_3$ ) and  $\text{Ca}(\text{NO}_3)_2$ . Injections rates varied between three and 11 pounds of N per acre. Total N injected was 60 pounds of N per acre. Pest control consisted of an application of Asana XL (insecticide, at a rate of 9.6 ounces per acre) on Sept. 13.

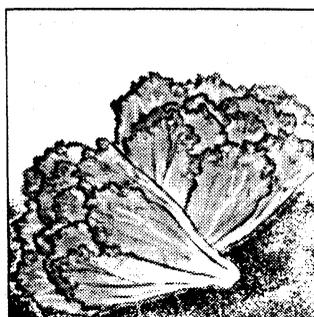
When they reached marketable size, cabbage heads

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 Dec. 2, 9, and 16 at BEF, and Nov. 29 and Dec. 6 at NAHS. Marketable weight (in numbers of 50-pound cartons) and corresponding number of heads were recorded (Table 3).

TABLE 3. 1996 CABBAGE VARIETY TRIAL RESULTS<sup>1</sup>

Variety	Actual marketable 50-lb. cartons	Actual marketable yield	Actual marketable heads	Actual pct. marketable	Actual Cull yield	Actual pct. stand	Adjusted marketable 50-lb. boxes
	<i>no./a.</i>	<i>lb./a.</i>	<i>no./a.</i>	<i>wt.</i>	<i>lb./a.</i>	<i>pct.</i>	<i>no./a.</i>
<b>Brewton Experiment Field</b>							
<i>Head Cabbage</i>							
Green Start .....	503	25,163	11,118	62	278	98	792
Wanda .....	503	25,152	11,445	64	278	93	766
Bravo .....	330	16,497	9,592	93	0	45	598
CB-7 .....	329	16,464	10,137	56	0	42	566
Tristar .....	314	15,685	7,739	43	0	93	706
PX 18589 .....	261	13,053	6,976	39	0	90	666
Cheers .....	231	11,543	6,431	36	0	97	623
Pacifica .....	182	9,080	4,142	23	0	76	787
Blue Ridge .....	153	7,652	3,924	22	0	91	671
Atlantis .....	128	6,404	4,033	22	0	91	579
Survivor .....	52	2,600	1,635	9	0	93	576
Royal Vantage .....	49	2,474	1,853	10	0	95	495
Early Marvel .....	17	861	545	3	14,377	89	585
<i>R</i> <sup>2</sup> .....		0.90	0.88				
<i>CV</i> .....		25	26				
<i>lsd</i> .....		4,207	2,156				
<b>North Alabama Horticulture Substation</b>							
<i>Oriental Cabbage</i>							
Summertime II .....	1,882	94,089	16,132	89	747	98	2,151
Kasumi .....	1,708	85,412	16,895	91	300	98	1,798
China Flash .....	1,655	82,775	16,132	89	785	95	1,790
Shinki .....	1,618	80,878	16,350	90	774	96	1,903
Yuki .....	1,478	73,880	16,895	91	360	98	1,555
Pak Choi-Lei Choi .....	1,022	51,099	16,350	90	2,458	99	1,363
<i>Head Cabbage</i>							
FMX 552 .....	496	24,781	16,023	89	1,749	99	541
Cheers .....	481	24,035	14,933	83	1,597	98	555
FMX 551 .....	464	23,210	12,644	70	986	81	533
Bravo .....	446	22,285	15,369	86	1,428	97	507
Blue Thunder .....	433	21,658	14,497	81	1,204	95	519
Blue Jem .....	422	21,089	13,298	74	1,624	89	552
Blue Vantage .....	416	20,775	14,279	79	1,085	92	508
FMX 553 .....	371	18,564	13,516	75	2,180	97	475
Green Cup .....	366	18,323	14,824	82	1,134	97	432
Atlantis .....	356	17,823	13,734	76	1,858	94	470
Royal Vantage .....	277	13,832	13,625	76	1,046	91	354
SCB 3319 .....	272	13,603	11,009	61	2,126	84	433
Quick Start .....	258	12,899	8,829	49	5,701	99	516
Fortress .....	215	10,747	10,791	60	3,483	98	346
<i>R</i> <sup>2</sup> .....		0.97	0.67				
<i>CV</i> .....		16	12				
<i>lsd</i> .....		7,970	2,490				

<sup>1</sup>See the introduction for information on interpreting the statistical analysis — *R*<sup>2</sup>, *CV*, and *lsd*.



# Lettuce Varieties Do Well in the Fall

ERIC SIMONNE, AMY SIMONNE, JIM BANNON, ARNOLD CAYLOR, TONY DAWKINS, BRIAN GAMBLE, MARVIN RUF, AND LARRY WELLS

Lettuce variety trials were conducted at the Wiregrass Substation (WS) in Headland, Horticulture Unit at E.V. Smith Research Center (EVSRC) in Shorter, North Alabama Horticulture Substation (NAHS), and Sand Mountain Substation (SMS) in Crossville (Tables 1 and 2). Lettuce was grown as a first crop at SMS and NAHS and as a second crop at WS and EVSRC (Table 3).

At all locations, six-week-old lettuce plants were transplanted in staggered rows 12 inches apart at an in-row spacing of 12 inches. Plastic-mulched, drip-irrigated plots were 12 feet long. At SMS, two staggered rows were planted on each bed, while at WS and EVSRC three staggered rows were planted. Beds were five feet apart. Transplanting dates were Sept. 12 at WS and Sept. 11 at EVSRC, NAHS, 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 96IPM-2 from the Alabama Cooperative Extension System).

At WS, 500 pounds of 13-13-13 and two tons of broiler litter per acre were preplant applied on Aug. 13. On Aug. 14 plastic was laid. Seven pounds per acre of N as potassium nitrate (KNO<sub>3</sub>) were injected weekly on Sept. 17, Oct. 1, Oct. 8, and Oct. 23. Asana XL (insecticide, at a rate of nine ounces per acre) and Bravo 720 (fungicide, at a rate of three pints per acre) were applied on Sept. 17, Sept. 23, and Oct. 9.

**TABLE 1. RATINGS OF 1996 LETTUCE VARIETY TRIALS<sup>1</sup>**

Location	WS	EVSRC	NAHS	SMS
Weather .....	5	5	5	5
Fertility .....	5	5	5	5
Irrigation .....	5	5	5	5
Pests .....	5	5	5	5
Overall .....	5	5	5	5

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

At EVSRC, bell pepper plants were removed and new holes were punched for lettuce establishment. Fertilization consisted of injections of six pounds per acre of N from a liquid calcium nitrate [Ca(NO<sub>3</sub>)<sub>2</sub>] solution (9-0-0-11) on Sept. 11 and 20 pounds per acre on Sept. 25 and Oct. 9. A 20-20-20 fertilizer was injected on Sept. 18, Oct. 1, and Oct. 15 at a rate of 13 pounds of N per acre. Insect control consisted of applications of Dipel (one pound per acre) on Sept. 11, Sept. 25, Oct. 3, Oct. 9, Oct. 15, and Oct. 22; Diazinon AG500 (two quarts per acre) on Sept. 11; and Asana XL (eight ounces per acre) on Sept. 18.

At NAHS, preplant fertilization consisted on an ap-

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

Variety	Seed source	Days to harvest	Head type	Leaf color	Disease claims <sup>1</sup>
Aquarius .....	Sakata	60	Butterhead	Green	—
Augustus .....	Petoseed	72	Romaine	Green	CR,LMV,TB
Big Curly .....	Vilmorin	68	Maraiçhere	Green	—
Cabernet Red .....	Asgrow	66	Looseleaf	Red	—
Epic .....	Sakata	65	Crisphead	Green	—
Gemini .....	Sakata	65	Crisphead	Green	TB,LMV
Greengo .....	Asgrow	—	Looseleaf	Green	—
Legacy .....	Takii	—	Crisphead	Green	—
Optima .....	Vilmorin	55	Butterhead	Green	DM,LMV
Nevada .....	Vilmorin	58	Batavia	Green	DM,LMV,TB
New Red Fire .....	Takii	45	Leaf	Red	—
Salinas 88 Supreme .....	Sakata	65	Crisphead	Green	LMV
Sangria MTO .....	Vilmorin	55	Butterhead	Red	DM,TB,LMV
Slobolt M.I. ....	Harris Seeds	48	Looseleaf	Green	—
Redprize .....	Ferry-Morse	46	Looseleaf	Green/Red	TB
Red Sails .....	Petoseed	45	Looseleaf	Red	None

<sup>1</sup>CR = club root; LMV = lettuce mosaic virus; TB = tip burn; DM = downy mildew; and — = not available.

TABLE 3. CROPPING SYSTEMS IN LETTUCE EVALUATION

Location	Plastic color	No. rows/bed	No. drip tapes/bed	Stand	Previous crop
WS .....	White	3	2	27,000	Tomato, Squash
EVSRC .....	White	3	2	27,000	Bell Peppers
NAHS .....	Black	2	1	18,000	None
SMS .....	Black	3	2	27,000	None

TABLE 4. YIELD OF SELECTED LETTUCE VARIETIES<sup>1</sup>

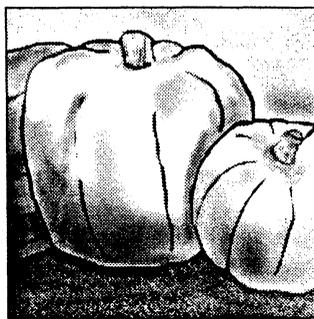
Variety	Marketable yield	Marketable heads	Marketable 50-lb. boxes	Cull wt.	Percent stand
	<i>lb./a.</i>	<i>no./a.</i>	<i>no./a.</i>	<i>lb./a.</i>	
<b>Wiregrass Substation</b>					
Legacy .....	13,789	13,169	549	—	50
Salinas 88					
Supreme .....	11,373	10,458	436	—	40
Epic .....	9,219	7,747	323	—	30
Optima .....	7,088	24,983	1,041	—	96
Nevada .....	6,987	24,838	1,035	—	95
Greengo .....	6,798	24,402	1,017	—	93
Red Prize .....	5,791	23,821	993	—	91
Cabernet Red .....	5,171	25,564	1,065	—	98
New Red Fire .....	4,590	19,754	823	—	76
Slobolt M.I. ....	4,241	19,560	815	—	75
Big Curly .....	3,951	24,983	1,041	—	96
FMX 2155 .....	2,130	16,849	702	—	64
<i>R</i> <sup>2</sup> .....	0.59	0.74			
<i>CV</i> .....	51	25			
<i>lsd</i> .....	11.775	14.607			
<b>E. V. Smith Research Center</b>					
Legacy .....	18,655	25,695	1,071	0	98
Augustus .....	18,221	25,695	1,071	77	98
Salinas 88 S. ....	17,169	25,477	1,062	0	98
Epic .....	15,566	25,695	1,071	0	98
Sangria MTO .....	13,534	24,824	1,034	0	95
Gemini .....	12,101	25,259	1,052	0	97
Aquarius .....	11,090	24,824	1,034	1,443	95
Red Sails .....	8,801	17,202	717	5,545	66
<i>R</i> <sup>2</sup> .....	0.48	0.91			
<i>CV</i> .....	28	4			
<i>lsd</i> .....	2.670	1.432			
<b>North Alabama Horticulture Substation</b>					
Augustus .....	17,271	13,189	550	5,096	100
Nevada .....	11,663	16,568	690	16	100
Sierra .....	9,390	16,677	695	104	100
Red Sails .....	9,347	14,388	600	1,046	98
Salanca GM .....	7,864	12,971	540	976	100
<i>R</i> <sup>2</sup> .....	0.45	0.33			
<i>CV</i> .....	38	18			
<i>lsd</i> .....	6.392	3.976			
<b>Sand Mountain Substation</b>					
Salinas 88 S. ....	19,239	21,780	908	0	100
Gemini .....	19,203	22,688	945	36	100
Nevada .....	15,954	22,869	953	290	100
Cabernet Red .....	14,556	25,410	1,059	0	100
Sangria MTO .....	11,707	19,421	809	36	90
New Red Fire .....	6,843	21,599	900	36	100
FMX 2155 .....	5,046	17,787	741	889	81
<i>R</i> <sup>2</sup> .....	0.45	0.13			
<i>CV</i> .....	53	30			
<i>lsd</i> .....	13.224	12.278			

<sup>1</sup>See the introduction for information on interpreting the statistical analysis — *R*<sup>2</sup>, *CV*, and *lsd*.

plication of 500 pounds per acre of 13-13-13 on Sept. 10. Between Sept. 19 and Nov. 1, lettuce plants were weekly fertilized with injections alternatively from ammonium nitrate ( $\text{NH}_4\text{NO}_3$ ) and  $\text{Ca}(\text{NO}_3)_2$ . Weekly injections rates varied between three and 11 pounds of N per acre. Total N injected was 60 pounds of N per acre.

At SMS, preplant fertilization consisted of 13-13-13 broadcast on Aug. 26. Lime was broadcast incorporated at a rate of one ton per acre on Aug. 23. A 20-20-20 fertilizer was injected at a rate of 10 pounds of N per acre on Sept. 23, Oct. 7, and Oct. 25.  $\text{Ca}(\text{NO}_3)_2$  at a rate of 14 pounds of N per acre was injected on Oct. 1 and 17;  $\text{KNO}_3$  at a rate of six pounds of N per acre was injected on Oct. 11. Insect control consisted of applications of Sevin XLR (at a rate of one pint per acre) applied on Sept. 12, Sept. 20, Sept. 25, and Oct. 17; Asana XL (at a rate of six ounces per acre) applied on Sept. 2 and 4; and Asana XL (at a rate of nine ounces per acre) applied on Sept. 11 and 24. Bravo (fungicide, at a rate of one pint per acre) was applied on Sept. 20.

When they reached marketable size, lettuce were harvested and graded according to the U.S. Standards for Grades of Romaine (U.S. Dept. of Agriculture Publication 60-6130). Harvest dates were Nov. 7 and 16 at WS; Oct. 21 at EVSRC; Oct. 25 and Nov. 5 at SMS; and Oct. 24 at NAHS. Yields were expressed in 50-pound boxes of 24 units (Table 4) calculated by dividing the number of marketable heads by 24. Heads were culled because of bolting or insufficient head size.



## A Broad Selection of Pumpkins Available for Halloween

ERIC SIMONNE, JIM BANNON, EMMETT CARDEN, ARNOLD CAYLOR, TONY DAWKINS, BRIAN GAMBLE, JOE KEMBLE, RONNIE MCDANIEL, JOHN OWEN, MALCOMB PEGUES, MARVIN RUF, AND LARRY WELLS

Pumpkin variety trials were conducted at the Gulf Coast Substation (GCS) in Fairhope, Wiregrass Substation (WS) in Headland, Horticulture Unit at the E. V. Smith Research Center (EVSRC) in Shorter, Piedmont Substation (PS) in Camp Hill, North Alabama Horticulture Substation (NAHS) in Cullman, and Sand Mountain Substation (SMS) in Crossville (Tables 1 and 2).

Cultural practices for pumpkins are similar to those for watermelon and cantaloupe. Pumpkins should be grown with adequate amounts of fertilizer, water, and pest control.

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 96IPM-2 from the Alabama Cooperative Extension System).

At all locations, hills containing two plants each were spaced 10 feet apart. Between-row spacing was 10 feet. Planting dates were July 22 at GCS, July 18 at WS, July 19 at EVSRC, July 16 at PS, July 12 at NAHS, and July 10 at SMS.

At GCS, fertilization consisted of an application (per acre) of 500 pounds of a 10-10-10 fertilizer. Preplant herbicides were Curbit 3EC (at a rate of four pints per acre) and Roundup (at a rate of two pints per acre), both applied on July 22. On Aug. 12, plants were sidedressed with 120 pounds of N per acre as ammonium nitrate ( $\text{NH}_4\text{NO}_3$ ). Pest control consisted of applications of Ambush 2E (insecticide, at a rate of 10 ounces per acre) on Aug. 5, 7, 13, and 20; Methyl Parathion (insecticide, at a rate of one quart per acre) on Sept. 30; Sevin 80S (insecticide, at a rate of two pounds per acre) on Sept. 5, 9, 20, and 24; Benlate 50WP (fungicide, at a rate of 0.5 pounds per acre) on Aug. 7, 13, 20, and 29; and Bravo 720 (fungicide, at a rate of three pints per acre) on Sept. 5, 9, 20, and 24.

TABLE 1. RATINGS OF  
1996 PUMPKIN VARIETY TRIALS<sup>1</sup>

Location	GCS	WS	EVSRC	PS	NAHS	SMS
Weather .....	5	5	5	5	5	5
Fertility .....	5	5	5	5	5	5
Irrigation .....	5	5	5	5	5	5
Pests .....	4	4	5	4	5	4
Overall .....	5	5	5	4	5	5

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

At WS, preplant fertilization consisted (per acre) of 600 pounds of 13-13-13 applied on July 16. On Aug. 16, plants were sidedressed with 60 pounds of N per acre as  $\text{NH}_4\text{NO}_3$ . Asana XL (insecticide, at a rate of nine ounces per acre) was applied on Sept. 9, Sept. 18, Sept. 23, and Oct. 9. Bravo 720 (fungicide) was applied on Aug. 19 at a rate of 1.5 pints per acre and on Aug. 28, Sept. 9, Sept. 18, Sept. 23, and Oct. 9 at a rate of three pints per acre. Pumpkins were over-head irrigated with one inch of water on Aug. 22.

At EVSRC, a 13-13-13 fertilizer was broadcast applied preplant on July 9 to provide 50 pounds of N,  $\text{P}_2\text{O}_5$ , and  $\text{K}_2\text{O}$  per acre. Preplant herbicide was Prefar 4E applied on July 9 at a rate of 5.5 quarts per acre. On Sept. 16,  $\text{NH}_4\text{NO}_3$  was banded to provide 30 pounds of N per acre.

Insect control at EVSRC was provided by applications of Asana XL (at a rate of eight ounces per acre) on Aug. 16; Terramil 6L (at a rate of 2.5 pints per acre) on Aug. 23, Sept. 3, Sept. 11, Sept. 25, Oct. 3, Oct. 9, Oct. 15, and Oct. 22; Asana XL (at a rate of eight ounces per acre) on Aug. 23, Sept. 3, Sept. 11, Sept. 25, Oct. 3, Oct. 9, Oct. 15, and Oct. 22; and Phaser (at a rate of 2.67 pounds per acre) on Sept. 18. Fungicides used were Manex II (at a rate of two pints per acre) on Aug. 16 and Sept. 18; Kocide 101 (fungicide, two pounds per acre) on Aug. 16 and 23; and Benlate (at a rate of 0.5 pounds per acre) on Sept. 18.

At NAHS, preplant fertilization consisted of 400 pounds per acre of calcium nitrate [ $\text{Ca}(\text{NO}_3)_2$ ] applied on July 11. Preplant herbicide was Command incorporated at a rate of two pints per acre on July 12. Pest

control consisted of applications of Asana XL (insecticide, at a rate of 9.6 ounces per acre) on Aug. 9 and Sept. 13; Bravo 720 (fungicide, at a rate of 48 ounces per acre) on Aug. 9; Ridomil/Bravo 720 (fungicide, at a rate of two pounds per acre); and Benlate 50WP (fungicide, at a rate of 0.5 pounds per acre) on Sept. 6 and 13.

At SMS, fertilization consisted of applications of 20-20-20 at a rate of 25 pounds per acre on July 24; potassium nitrate ( $KNO_3$ ) at a rate of 25 pounds per acre on Aug. 1, 6, 14, and 22; and  $Ca(NO_3)_2$  at a rate of 25 pounds per acre on Aug. 30 and Sept. 9.

Pest control consisted of applications of Asana XL (insecticide, at a rate of nine ounces per acre) on July 26, Aug. 2, and Aug. 16; Phaser (insecticide, at a rate of 1.5 pints per acre) on Aug. 9 and 30; Bravo 720 (fungicide, at a rate of two pints per acre) on July 26, Aug. 8, Aug. 23, Sept. 4, Sept. 12, Sept. 19, and Sept. 25; Ridomil (fungicide, at a rate of 1.5 pounds per acre) on Aug. 2, Aug. 16, Aug. 30, and Sept. 7; Manzate 200 (fungicide, at a rate of two pounds per acre) on Aug. 2 and 30; and Benlate (fungicide, at a rate of 0.5 pound per acre) on Aug. 30 and Sept. 7.

Harvest dates were Oct. 9 and 10 at GCS; Oct. 11 and 18 at WS; Oct. 22 at EVSRC; Oct. 11, Oct. 23, and Nov. 8 at PS; Oct. 13 and 19 at NAHS; and Sept. 23 and Oct. 3 at SMS. Because color development stops after harvest, pumpkins were harvested at the full-color stage and graded as marketable or non marketable (Table 3).

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

Variety	Type <sup>1</sup>	Seed source	Maturity	
			days	lb.
Appalachian .....	F1	Rupp Seeds	90	20-25
Autumn Gold .....	F1	Sandoz Rogers	90	8-10
Baby Bear .....	OP	Rupp Seeds	105	1-2
Baby Pam .....	OP	SeedWay	100	10-12
Big Autumn .....	F1	Sandoz Rogers	90	15-20
Big Max .....	F1	Asgrow	120	35-50
Casper <sup>2</sup> .....	OP	Rupp Seeds	90	10-20
Cinderella <sup>3</sup> .....	OP	Vilmorin	95	20-30
Connecticut Field .....	OP	Rupp Seeds, Asgrow	115	15-25
Early Sweet Sugar .....	OP	Sandoz Rogers	90	6-8
F-92-5-1 Seminole <sup>4</sup> .....	F1	U. of Florida	—	15-20
Gold Rush .....	OP	Rupp Seeds	120	30-40
Gold Strike .....	F1	Rupp Seeds	100	15-22
HMX 2690 .....	F1	Harris Seeds	—	3-5
Howden .....	OP	Stokes, Harris, Rupp	100	15-20
Howden Biggie .....	OP	Harris Seeds	115	35-50
Jack-Be-Quick .....	OP	Rupp Seeds	95	0.25
Jack-of-All-Trades .....	F1	Rupp Seeds	88	9-10
Jackpot .....	F1	Harris Seeds	100	10-12
Jumpin' Jack .....	OP	Rupp Seeds	120	30-50
La Primera <sup>4</sup> .....	F1	U. of Florida	—	15-20
Little Lantern .....	OP	Stokes	100	1-2
Lumina <sup>2</sup> .....	OP	Rupp Seeds, Stokes	90	10-15
Mother Lode .....	F1	Rupp Seeds	100	20-30
Oz .....	F1	Harris Seeds	105	3-5
Pankows Field .....	OP	Harris Seeds	120	15-20
Peek-A-Boo .....	F1	Rupp Seeds	90	3-4
Small Sugar .....	F1	Stokes, Asgrow	100	7
Soler <sup>2</sup> .....	F1	U. of Florida	—	15-20
Spirit .....	F1	Petoseed	98	10-12
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
SWP 8729 .....	F1	SeedWay	105	20-25
Thomas Halloween .....	OP	SeedWay	110	16-35
Trick-or-Treat .....	F1	Petoseed	98	10-12
Trickster .....	F1	Rupp Seeds	90	3-3.5
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>F1 = hybrid; OP = open pollinated.

<sup>2</sup>White-skinned varieties.

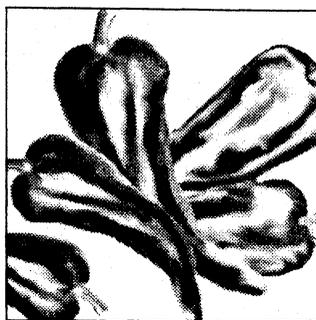
<sup>3</sup>Also sold as 'Rouge Vif D'Etamps.'

<sup>4</sup>Tropical.

TABLE 3. FIELD PERFORMANCE OF SELECTED PUMPKIN VARIETIES<sup>1</sup>

Variety	Market. yield	Market. fruits	Culled yield	Total yield	Ind. fruit wt.	Variety	Market. yield	Market. fruits	Culled yield	Total yield	Ind. fruit wt.
	lb./a.	no./a.	lb./a.	lb./a.	lb.		lb./a.	no./a.	lb./a.	lb./a.	lb.
<b>Gulf Coast Substation</b>						<b>Piedmont Substation</b>					
Cinderella	40,814	2,132	6,427	47,241	19	Big Max	29,587	1,892	—	29,587	16
Gold Strike	28,590	1,784	4,263	32,853	16	VAR #500	25,415	1,414	—	25,415	18
Connecticut Field	24,643	1,892	1,533	26,176	13	Casper	23,204	3,632	—	23,204	7
Howden	24,327	1,501	0	24,327	16	Gold Rush	22,387	1,327	—	22,387	16
Mother Lode	24,121	1,653	837	24,958	15	Connecticut Field	20,715	1,697	—	20,715	12
Jack-of-all-Trades	21,489	2,023	1,392	22,881	11	Howden	20,543	1,066	—	20,543	20
Trick-or-Treat	20,228	2,066	0	20,228	10	SWP 8729	20,399	1,153	—	20,399	20
Thomas Halloween	16,845	1,262	1,022	17,868	13	Spirit	19,155	1,501	—	19,155	12
Spooktacular	16,247	6,482	0	16,247	3	Jack-of-all-Trades	18,319	1,479	—	18,319	12
Trickster	15,617	6,656	0	15,617	2	Thomas Halloween	17,016	1,247	—	17,016	13
Small Sugar	15,377	4,676	827	16,204	3	VAR #510	15,013	870	—	15,013	18
Lumina	4,394	870	152	4,546	5	Thai	12,254	3,480	—	12,254	3
R <sup>2</sup>	0.74	0.92		0.79	0.97	Peek-A-Boo	10,938	3,589	—	10,938	3
CV	28	23		26	10	R <sup>2</sup>	0.41	0.82		0.41	0.70
lsd	8,321	923		8,502	2	CV	35	28		35	32
<b>Wiregrass Substation</b>						<b>North Alabama Horticulture Substation</b>					
RWS 159	13,424	1,610	—	13,424	8	Appalachian	28,701	2,001	602	29,304	14
Var.#300	11,910	1,349	—	11,910	9	Thomas Holloween	26,513	2,066	735	27,248	13
Pankows Field	10,466	1,218	—	10,466	8	Connecticut Field	23,409	1,784	820	24,229	13
Var.#500	9,109	827	—	9,109	11	Jack-of-all-trades	19,964	2,153	797	20,761	9
SWP 8729	8,104	783	—	8,104	11	La Primera	17,234	1,501	264	17,499	11
Jack-of-all-Trades	8,048	1,305	—	8,048	6	Autum Gold	16,415	2,045	150	16,565	8
Peek-A-Boo	6,912	1,958	—	6,912	4	Howden	13,175	1,022	310	13,485	12
Spookie	5,873	1,610	—	5,873	3	RWS 523	12,851	1,283	313	13,164	10
HMX 2690	5,646	1,001	—	5,646	6	Soler	10,510	957	632	11,142	11
Howden	4,489	522	—	4,489	9	Spookie	8,174	2,871	272	8,446	3
Var.#510	4,185	435	—	4,185	10	Peek-A-Boo	7,413	3,023	0	7,413	2
Early Sweet Sugar	2,945	566	—	2,945	5	F-92-5-1	4,791	928	0	4,791	6
Big Autumn	1,466	305	—	1,466	7	Sweetie Pie	1,936	4,459	0	1,936	1
Big Max	761	174	—	761	4	Jack-be-Quick	1,819	6,569	0	1,819	0.3
Howden Biggie	344	87	—	344	4	R <sup>2</sup>	0.64	0.58		0.66	0.83
Jack-Be-Quick	244	609	—	244	0	CV	52	62		51	31
R <sup>2</sup>	0.46	0.47		0.46		lsd	10,725	2,158		10,611	4
CV	84	74		84		<b>Sand Mountain Substation</b>					
lsd	3,522	471		3,522		Var #300	29,277	2,471	1,145	30,422	12
<b>E.V. Smith Research Center</b>						Spirit	2,889	3,161	0	28,889	9
Jumpin' Jack	19,776	899	3,782	23,558	23	Var #500	21,466	1,635	2,347	23,813	13
Big Max	15,629	370	1,164	16,793	41	Var #510	16,038	1,126	2,743	18,781	14
Howden Biggie	13,042	457	4,205	17,246	28	Trick-or-Treat	15,889	1,744	0	15,889	10
Cinderella	12,230	609	2,813	15,043	20	Jackpot	15,863	1,526	1,635	17,498	10
Wizard	11,818	1,044	31	11,849	11	Howden	15,838	1,235	392	16,230	13
Small Sugar	10,711	2,675	838	11,549	4	Wizard	15,485	1,526	1,399	16,884	11
Howden	8,155	348	115	8,270	19	Spooktacular	12,629	5,486	429	13,058	2
Trick-or-Treat	7,805	609	90	7,894	12	Sugar Treat	9,527	3,161	472	9,999	3
Oz	6,614	2,175	89	6,703	3	Baby Pam	7,979	3,670	73	8,051	2
Lumina	4,745	653	826	5,570	6	Oz	7,161	3,452	683	7,844	2
Spirit	4,349	319	522	4,870	17	Baby Bear	7,085	5,305	131	7,216	1
Spooktacular	3,674	1,196	156	3,830	3	Little Lantern	6,714	2,907	1,057	7,772	2
Sugar Treat	3,413	827	418	3,830	4	Jack-be-Quick	5,479	16,023	40	5,519	0.3
Casper	3,261	348	637	3,898	10	R <sup>2</sup>	0.70	0.75		0.74	0.96
Baby Bear	2,326	1,457	367	2,693	2	CV	41	70		37	18
R <sup>2</sup>	0.69	0.53		0.60	0.87	lsd	4,229	9,729		9,267	3
CV	67	57		62	41						
lsd	9,731	2,170		10,013	9						

<sup>1</sup>See the introduction for information on interpreting the statistical analysis — R<sup>2</sup>, CV, and lsd.



## Few Hot Peppers Resistant to Bacterial Leaf Spot

ERIC SIMONNE, BOBBY BOOZER, ARNOLD CAYLOR, AND JIM PITTS

Hot pepper variety trials were conducted at the Chilton Area Horticulture Substation (CAHS) in Clanton and North Alabama Horticulture Substation (NAHS) in Cullman (Tables 1 and 2).

Hot peppers were planted in five-foot-long plots at a within-row spacing of 12 inches. At CAHS, double rows were one foot apart; black plastic with drip irrigation were used. At NAHS, plants were transplanted in single rows on bare ground and were drip irrigated. At both locations, transplanting date was May 16.

At CAHS, fertilization consisted of a preplant application (per acre) of 54 pounds of nitrogen (N) and potassium (K<sub>2</sub>O) and of weekly injections ranging between seven and 14 pounds of N and K between May 1 and July 10. A total of 140 pounds of N and K were injected during the growing season.

Insect control was provided by applications of Thiodan (at a rate of one pint per acre) on May 22 and 30; and Lannate LV (at a rate of two pints per acre) on June 5, June 12, June 21, June 28, July 3, and Aug. 3. Fungicides used were Kocide (at a rate of 2.7 pints per acre) and Maneb 80 (at a rate of 1.5 pounds per acre)

Location	CAHS	NAHS
Weather .....	5	5
Fertility .....	5	5
Irrigation .....	5	5
Pests .....	3	5
Overall .....	4	5

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

applied on May 22, May 30, June 5, June 12, June 21, June 28, July 3, and Aug. 3; and Ridomil/Bravo 81W (at a rate of two pints per acre) applied on Aug. 8.

At NAHS, preplant fertilization consisted of an application of a 5-10-15 fertilizer at a rate of 150 pounds per acre. Peppers were sidedressed with calcium nitrate [Ca(NO<sub>3</sub>)<sub>2</sub>] at a rate of 70 pounds of N per acre. Insecticides used were Asana (at a rate of 9.6 ounces per acre) on June 3, June 7, June 28, July 19, July 26, and Aug. 2; and Dimethoate (at a rate of two pints per acre) on June 7; and Lannate LV (at a rate of three pints per acre) on

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

Variety	Type	Classification	Seed source	Days to harvest	Shape	Color <sup>1</sup>	RSR <sup>2</sup>	Disease claims <sup>3</sup>
Ancho San Luis ...	OP	Ancho	Petoseed	78	Heart-shaped; blunt point	G-R	1,500-4,500	—
Cherry Bomb .....	F1	Hot Cherry	Petoseed	67	Oblate or globe-shaped	G-R	2,500-5,000	TbMV
Delicias .....	F1	Jalapeno	Petoseed	67	Bullet-shaped	G-R	500	PeMV,PVY, TbEV
Inferno .....	F1	Hungaria Wax	Petoseed	63	Tapered and smooth	Y-R	2,500-4,500	—
Mitla .....	F1	Jalapeno	Petoseed	74	Bullet-shaped	G-R	4,000-6,000	—
Mulato Isleno .....	OP	Poblano	Petoseed	89	Tapered end	G-Br	500-1,000	—
Ole .....	OP	Jumbo Jalapeno	Ferry-Morse	80	Tapered end	G-R	—	—
Papri King .....	OP	Paprika	Petoseed	100	Flat; tapered	G-R	500-1,000	—
Pasilla Bajio .....	OP	Cayenne	Petoseed	77	Long; 2-celled; wrinkled	G-Br	100-250	TbMV
Picante .....	F1	Jalapeno	Harris Seeds	80	Cylindrical; blunt end	G-R	—	TbMV
Santa Fe Grande .....	OP	Jalapeno	Petoseed	77	Large; conical tapering	Y-O-R	5000-8000	TbMV
Vulcano .....	F1	Hungarian Wax	Ferry-Morse	63	Tapered	Y-R	—	TbMV

<sup>1</sup>G = green; R = red; Y = yellow; Br = brown; and O = orange.

<sup>2</sup>Relative Scoville Rating; the higher the RSR, the hotter the variety.

<sup>3</sup>TbMV = tobacco mosaic virus; PeMV = pepper mottle virus; PVY = potato virus Y; TbEV = tobacco etch virus; and — = not available.

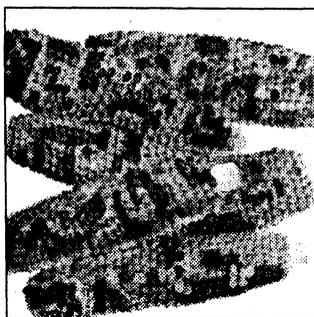
**TABLE 3. YIELD AND WEIGHT OF 100 PODS  
OF SELECTED HOT PEPPER VARIETIES<sup>1</sup>**

Variety	CAHS marketable wt. <i>lb./a.</i>	NAHS marketable wt. <i>lb./a.</i>	Weight <i>lb./100 pods</i>
Ancho San Luis .....	8,302	14,037	12.4
Cascabella .....	7,017	14,826	1.0
Cherry Bomb .....	15,147	26,886	6.2
Delicias .....	18,118	28,918	5.9
Golden Heat .....	23,314	33,422	1.8
Hot Beauty .....	23,870	30,800	2.0
Inferno .....	12,328	49,132	10.6
Mitla .....	20,304	31,320	6.0
Mulato Isleno .....	8,494	—	—
NAHS-X101 .....	—	38,910	4.5
Ole .....	11,676	24,369	6.3
Papri King .....	23,334	20,609	2.8
Passilla Bajio .....	12,827	15,014	5.8
Picante .....	18,003	32,981	4.8
Santa Fe Grande .....	10,545	23,755	4.0
Vulcano .....	17,850	58,196	13.4
<i>R</i> <sup>2</sup> .....	0.41	0.81	
<i>CV</i> .....	50	25	
<i>lsd</i> .....	4.973	8.726	

<sup>1</sup>See the introduction for information on interpreting the statistical analysis — *R*<sup>2</sup>, *CV*, and *lsd*. Mulato Isleno was not planted at NAHS, and NAHS-X101 was not planted at CAHS.

July 19, July 26, and Aug. 2. 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 and 28; and Kocide 101 (at a rate of three pounds per acre) on June 18 and 28.

Peppers were harvested on July 13, Aug. 1, and Aug. 20 at CAHS and July 10 and Aug. 28 at NAHS. The weight of 25 pods was determined (Table 3). At both locations, plants produced pods throughout the summer. At CAHS, bacterial leaf spot (BLS) was present during the summer. Except for 'Hot Beauty' and 'Golden Heat', plants were defoliated at approximately 80% during the summer, and all fruits were sun-burned. In fall, new leaves developed and marketable pods were harvested again (data not shown). 'Hot Beauty' and 'Golden Heat' were not affected at all by the strain of BLS present.



## Colorful and Attractive: Varieties of Ornamental Corn

ERIC SIMONNE, JIM BANNON, AND ARNOLD CAYLOR

Ornamental corn variety trials were conducted at the Horticulture Unit at the E.V. Smith Research Center (EVSRC) in Shorter and North Alabama Horticulture Substation in Cullman (Table 1). At both locations, corn was direct seeded on bare ground in four-row plots, each 20 feet long. 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.

At EVSRC, preplant herbicides were Sutan (at a rate of four pints per acre) and Atrazine (at a rate of two pints per acre) applied on May 6. Preplant fertilization provided (per acre) 50 pounds of N and P, and 100 pounds of K. Planting date was May 21.

At NAHS, planting date was May 8. Fertilization consisted of a preplant application at a rate of 120 pounds per acre of N on May 6 and a sidedress application of 60 pounds of N on June 4, both as ammonium nitrate ( $\text{NH}_4\text{NO}_3$ ). Weed control was provided by an applica-

tion of Atrazine (at a rate of two pints per acre) on May 14. Insect control was provided by applications of Asana at a rate of 9.6 ounces per acre on June 3 and 21; Lannate LV (at a rate of two pints per acre) on June 26, June 28, July 3, July 12, July 19, July 24, and Aug. 9; and Larvin (at a rate of 45 ounces per acre) on July 12, July 19, July 24, and Aug. 9.

Ears were allowed to dry on the plant and were harvested on Aug. 19 at EVSRC and Aug. 20 at NAHS (Table 3). Due to cross-pollination between varieties, kernel color was not true to type.

**TABLE 1. RATINGS OF  
1996 ORNAMENTAL  
CORN VARIETY TRIALS<sup>1</sup>**

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

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

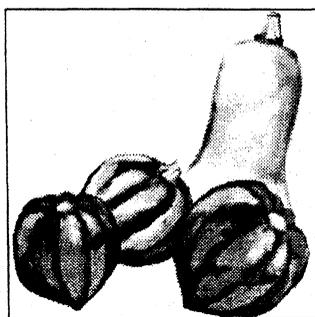
**TABLE 2. SEED SOURCE AND FRUIT TYPE OF SELECTED  
ORNAMENTAL CORN VARIETIES**

Variety	Type	Seed source	Days to harvest	Ear length
Alabama Coschatta .....	Ornamental	Rupp Seeds	110	<i>in.</i> 8-10
Mr. T .....	Ornamental	Rupp Seeds	95	5-8
Chinook .....	Ornamental	Rupp Seeds	90	5-7
Wampum .....	Ornamental	Rupp Seeds	95	4-6
Rainbow Purple Husk .....	Ornamental	Rupp Seeds	110	8-10

**TABLE 3. YIELD AND NUMBER OF EARS OF  
SELECTED ORNAMENTAL CORN VARIETIES<sup>1</sup>**

Variety	EVSRC		NAHS	
	Yield	Ear no.	Yield	Ear no.
	<i>lb./a.</i>	<i>no./a.</i>	<i>lb./a.</i>	<i>no./a.</i>
Purple Husk				
Rainbow .....	5,304	29,212	10,641	21,473
Alabama				
Coschatta .....	4,587	26,814	12,853	38,695
Wampum .....	3,391	29,975	7,052	47,524
Mr. T .....	2,815	23,653	9,105	65,237
Chinook .....	2,002	20,274	3,800	26,869
R <sup>2</sup> .....	0.55	0.58	0.58	0.51
CV .....	34	13	35	44
lsd .....	852	5,245	4,546	26,674

<sup>1</sup>See the introduction for information on interpreting the statistical analysis — R<sup>2</sup>, CV, and lsd.



# First Evaluation of Winter Squash Varieties

ERIC SIMONNE AND ARNOLD CAYLOR

A winter squash variety trial was conducted in spring 1996 at the North Alabama Horticulture Substation (NAHS) in Cullman (Table 1). Selected varieties (Table 2) were planted on bare ground on May 10 in 20-foot-long, seven-foot-wide plots. Preplant herbicide was Curbit applied on May 10 at a rate of 4.5 pints per acre.

Fertilization consisted of a preplant application (per acre) of 120 pounds of N on May 8 and a sidedress of 40 pounds of N on June 13, both as ammonium nitrate (NH<sub>4</sub>NO<sub>3</sub>). Insecticides used were Asana (9.6 ounces per acre) on June 3, June 7, June 14, June 21, July 3, July 12, July 19, and Aug. 2; and Dimethoate (two pints per acre) on

June 7. Fungicide used was Bravo 720 (two pints per acre) on June 3, June 7, June 14, June 21, June 28, July 3, July 12, July 19, and Aug. 2.

Most varieties were once-over harvested on Aug. 15. Because 'Scallopini' has to be picked while small and tender, it was picked as needed between June 20 and Aug. 15 (Table 3).

**TABLE 1. RATINGS OF WINTER SQUASH VARIETY TRIALS<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.

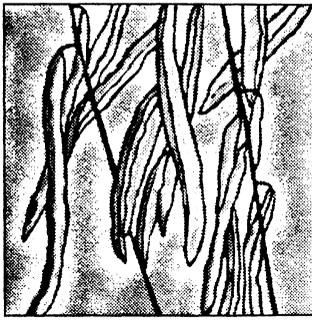
**TABLE 2. SEED SOURCE, FRUIT TYPE, RELATIVE EARLINESS, AND GROWTH HABIT OF WINTER SQUASH VARIETIES**

Variety	Type	Description	Seed source	Days to harvest	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	Novelty	Stokes	70	Vining
Early Butternut .....	F1	Butternut	Stokes	75	Semi-Erect
Golden Delicious .....	OP	Delicious	Stokes	100	Vining
Sweet Dumpling .....	OP	Sweet Potato	Stokes	100	Vining
Ultra Butternut .....	F1	Butternut	SeedWay	90	Vining
Scallopini .....	F1	Scallop	Stokes	50	Erect
Butternut Supreme .....	F1	Butternut	Stokes	97	Vining
Swan White Acorn .....	OP	Acorn	Stokes	80	Vining
Tivoli .....	F1	Spaghetti	Sakata	90	Erect
Honey Delite .....	F1	Buttercup	Sakata	90	Vining
Carnival .....	F1	Novelty	Harris	90	Erect

**TABLE 3. YIELD OF SELECTED WINTER SQUASH VARIETIES<sup>1</sup>**

Variety	Total marketable wt.	Total marketable no.	Individual fruit wt.
	lb./a.	no./a.	lb.
Vegetable Spaghetti .....	110,681	33,604	3.30
Hubbard Improved Green .....	105,869	11,357	9.16
Ultra Butternut .....	89,938	27,692	3.11
Golden Hubbard .....	88,505	14,157	6.18
Golden Delicious .....	80,280	9,957	7.66
Sweet Mama .....	80,121	20,225	3.96
Butternut Supreme .....	69,338	42,005	1.64
Scallopini .....	67,697	54,762	1.23
Tivoli .....	64,537	23,336	2.81
Early Butternut .....	50,226	38,427	1.30
Carnival .....	49,316	42,161	1.10
Tay Belle .....	39,675	24,581	1.58
Honey Delight .....	37,721	12,757	2.74
Swan White Acorn .....	34,704	30,026	1.15
Sweet Dumpling .....	24,934	28,626	0.87
R <sup>2</sup> .....	0.57		
CV .....	39		
lsd .....	34,500		

<sup>1</sup>See the introduction for information on interpreting the statistical analysis — R<sup>2</sup>, CV, and lsd.



# Results of 1996 Southernpea Cooperators' Trials

FENNY DANE, GENE HUNTER, AND ERIC SIMONNE

The E.V. Smith Research Center has been one of the 10 sites in the Southeast, from Texas to South Carolina, where southernpea breeding lines are tested to evaluate their adaptability and yield potential. The Alabama Agricultural Experiment Station submitted three breeding lines in 1994, two in 1995, and three in 1996. 'AU93M-C' and 'AU93M-E' are bush pinkeye purple hulls with persistent green seed coats. 'AU93M-G' is a bush cream type with large pods.

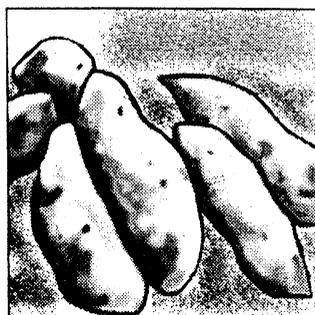
Planting dates were May 27, 1994, May 23, 1995, and June 6, 1996. Plants were thinned to four inches apart in rows 30 inches apart. Overhead irrigation with conventional flat planting in 1994 and drip lines with raised rows in 1995 and 1996 were used as needed to ensure a minimum of one inch of water per week. In all years, 100 pounds per acre of phosphorus and potassium were spread and incorporated before seeding, and plants were side-dressed with 30 pounds per acre of nitrogen.

All pods, including "snaps" were harvested from each plot when 80% of the pods were dry. 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 ones to soak up water (imbibe) overnight. This step makes comparisons more realistic since all peas are at the same moisture level. Imbided weights are estimates of mature green, shelled weight yield (Table 1). Bushels of fresh, in-pod yield per acre may be estimated by multiplying the imbided weight by two (assuming an average shell-out of 50%) and dividing it by 25 (the average weight of a bushel of fresh, unshelled southernpeas). The following standard pink-eye varieties were used as checks for 'AU93M-C' and 'AU93M-E': 'Coronet', 'C.T. Pinkeye', and 'Pinkeye Purplehull-BVR' (PEPH-BVR). The cream 'Early Acre' was used as a check for 'AU93M-G'.

TABLE 1. RELATIVE EARLINESS AND IMBIBED SHELLED YIELD OF SELECTED SOUTHERNPEA LINES

Line	Days to maturity				Mature-green shelled yield				Fresh in-pod yield <sup>1</sup>			
	1994	1995	1996	Average	1994	1995	1996	Average	1994	1995	1996	Average
					<i>lb./a.</i>	<i>lb./a.</i>	<i>lb./a.</i>	<i>lb./a.</i>	<i>bu./a.</i>	<i>bu./a.</i>	<i>bu./a.</i>	<i>bu./a.</i>
AU93M-C .....	74	65	63	67	1,398	1,355	967	1,240	112	108	77	99
AU93M-E .....	68	63	61	64	1,169	2,085	810	1,355	93	167	65	108
AU93M-G .....	74	—	63	69	1,360	—	1,110	1,235	108	—	89	99
Coronet .....	72	64	62	66	1,590	2,135	1,278	1,668	127	179	102	136
CT Pinkeye .....	—	67	62	65	—	1,947	1,174	1,561	—	156	94	125
PEPH-BVR .....	68	65	61	65	1,960	1,995	1,153	1,703	157	160	92	136
Early Acre .....	70	—	56	63	728	—	598	663	58	—	48	53

<sup>1</sup>Fresh in-pod yield is measured in 25-pound bushels per acre.



# Sweetpotatoes 'NC-C59' and 'NC-C75' Released as 'Carolina Rose' and 'Carolina Ruby'

ERIC SIMONNE, JIM BANNON, BOBBY BOOZER, ARNOLD CAYLOR, AND JIM PITTS

National Sweetpotato Collaborator's Trials were conducted at the E.V. Smith Research Center (EVSRC) near Shorter, Chilton Area Horticulture Substation (CAHS) in Clanton, and North Alabama Horticulture Substation (NAHS) in Cullman (Tables 1 and 2).

Sweetpotato seed roots from selected commercial varieties and breeding lines were planted in a heated bed at NAHS on April 2 for slip production. On May 20, slips were removed from the beds 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, plots were 30 feet long and 3.5 feet wide. Within-row spacing was one foot. Fertilizer applications followed the recommendations of the AU soil testing laboratory.

At EVSRC, preplant fertilization consisted of a broadcast application of 13-13-13 at a rate of 300 pounds per acre. Planting date was May 30. Dacthal herbicide was applied at a rate of 10 pounds per acre. On June 17, sweet potatoes were sidedressed with 40 pounds of N per acre as ammonium nitrate (NH<sub>4</sub>NO<sub>3</sub>). Overhead irrigation was applied as needed.

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.

At CAHS, 1,000 pounds per acre of a 5-10-15 fertilizer were preplant applied on May 25. On May 31, slips were transplanted. Mocap 6E nematicide (at a rate of six pounds per acre) and Eptam herbicide (at a rate of 3.4 pints a.i. per acre) were applied. Sencore herbicide was applied on May 25 at a rate of 0.66 pound per acre. No irrigation was necessary.

At NAHS, NH<sub>4</sub>NO<sub>3</sub> was broadcast applied at a rate of 100 pounds of N per acre on May 22. Temik nematicide was applied preplant at a rate of 20 pounds per acre. Slips were transplanted on May 31. Weed control was provided by an application of Command (one quart per acre) on

Variety	Origin	Year	Resistance	Susceptibility
Beauregard .....	LSU	1987	Fusarium Wilt Soil Rot (Pox) Internal Cork Sclerotia Blight Circular Spot	Southern Root-Knot Nematode Bacterial Soft Rot
Carolina Nugget .....	NCSU, AU	1985		Stem Rot Nematode
Carolina Rose .....	NCSU	1997	N/A	N/A
Carolina Ruby .....	NCSU	1997	N/A	N/A
Cordner .....	TAM, OSU	1984	Fusarium Wilt Stem Rot Southern Root-Knot Nematode	Soil Rot (Pox)
Darby .....	LSU	1995	Soil Rot Fusarium Wilt Stem Rot Internal Cork Fusarium Root Rot Bacterial Root Rot Soft Rot	Southern Root-Knot Nematode Reniform Nematode
Georgia Jet .....	UGA	1974	Stem Rot	Nematodes
Hernandez .....	LSU	1992	Fusarium Wilt Southern Root-Knot Nematode Soil Rot Bacterial Root Rot	Internal Cork Stem Rot
Jewel .....	NCSU	1970		Stem Rot Nematode

TABLE 3. YIELD AND GRADE DISTRIBUTION OF 1996 SWEETPOTATO SELECTIONS <sup>1</sup>

Selection	US #1	Canner	Jumbo	Cull	Total marketable	Percent US#1
	<i>bu./a.</i>	<i>bu./a.</i>	<i>bu./a.</i>	<i>bu./a.</i>	<i>bu./a.</i>	<i>pct.</i>
<b>E.V. Smith Research Center</b>						
Georgia Jet .....	290	33	285	8	609	48
L-89-110 .....	247	33	120	7	400	62
Jewel .....	234	65	57	12	355	66
Darby .....	228	24	155	19	407	59
Hernandez .....	218	47	69	26	334	66
NC-C75 .....	175	33	172	13	379	45
NC-C59 .....	171	42	179	14	392	42
Beauregard .....	154	41	137	25	332	49
Carolina Nugget .....	139	44	153	16	336	44
Cordner .....	105	43	24	20	172	60
<i>R</i> <sup>2</sup> .....	0.61	0.35	0.62	0.25	0.69	0.41
<i>CV</i> .....	25	40	47	77	21	22
<i>lsd</i> .....	49	29	58	25	63	24
<b>Chilton Area Horticulture Substation</b>						
L-89-110 .....	230	77	71	79	378	60
Beauregard .....	228	97	61	116	388	58
NC-C59 .....	194	125	132	57	451	43
NC-C75 .....	168	120	84	136	373	46
Darby .....	157	99	107	76	363	42
Cordner .....	121	123	8	84	252	47
MS-D45 .....	104	102	10	90	215	44
Jewel .....	94	84	4	93	182	50
Carolina Nugget .....	89	64	24	109	177	50
Hernandez .....	79	72	18	42	169	47
Georgia Jet .....	62	75	20	338	157	38
<i>R</i> <sup>2</sup> .....	0.50	0.20	0.76	0.53	0.56	0.22
<i>CV</i> .....	47	51	55	74	37	28
<i>lsd</i> .....	58	49	39	63	73	24
<b>North Alabama Horticulture Substation</b>						
Beauregard .....	313	130	42	56	485	66
NC-C59 .....	290	122	66	59	478	60
Georgia Jet .....	287	118	90	127	495	56
NC-C75 .....	252	139	42	48	432	57
L-89-110 .....	241	183	39	25	463	51
Hernandez .....	241	82	2	29	325	74
NC-91-14 .....	225	157	11	51	392	54
NC-93-17 .....	219	289	4	39	513	42
Jewel .....	218	209	7	34	433	51
W-306 .....	214	200	30	35	444	47
Carolina Nugget .....	206	111	19	49	335	63
Darby .....	192	182	17	12	390	48
MS-D45 .....	183	184	10	33	376	50
W-323 .....	158	177	5	36	340	47
Cordner .....	152	122	23	30	297	47
NC-91-09 .....	144	190	13	36	347	48
W-308 .....	82	68	0	37	150	53
<i>R</i> <sup>2</sup> .....	0.40	0.47	0.46	0.41	0.43	0.34
<i>CV</i> .....	38	40	121	76	30	24
<i>lsd</i> .....	63	58	39	39	78	24

<sup>1</sup>See the introduction for information on interpreting the statistical analysis — *R*<sup>2</sup>, *CV*, and *lsd*.

May 23. Plants were overhead irrigated on July 2.

Sweetpotatoes were harvested on Oct. 17 at EVSRC, Sept. 25 at CAHS, and Sept. 13 at NAHS (Table 3). Roots were graded as US#1 (roots 2-3.5 inches in diameter, 3-9 inches in length, well shaped and free of defects), canner (roots 1-2 inches in diameter, 2-7 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.

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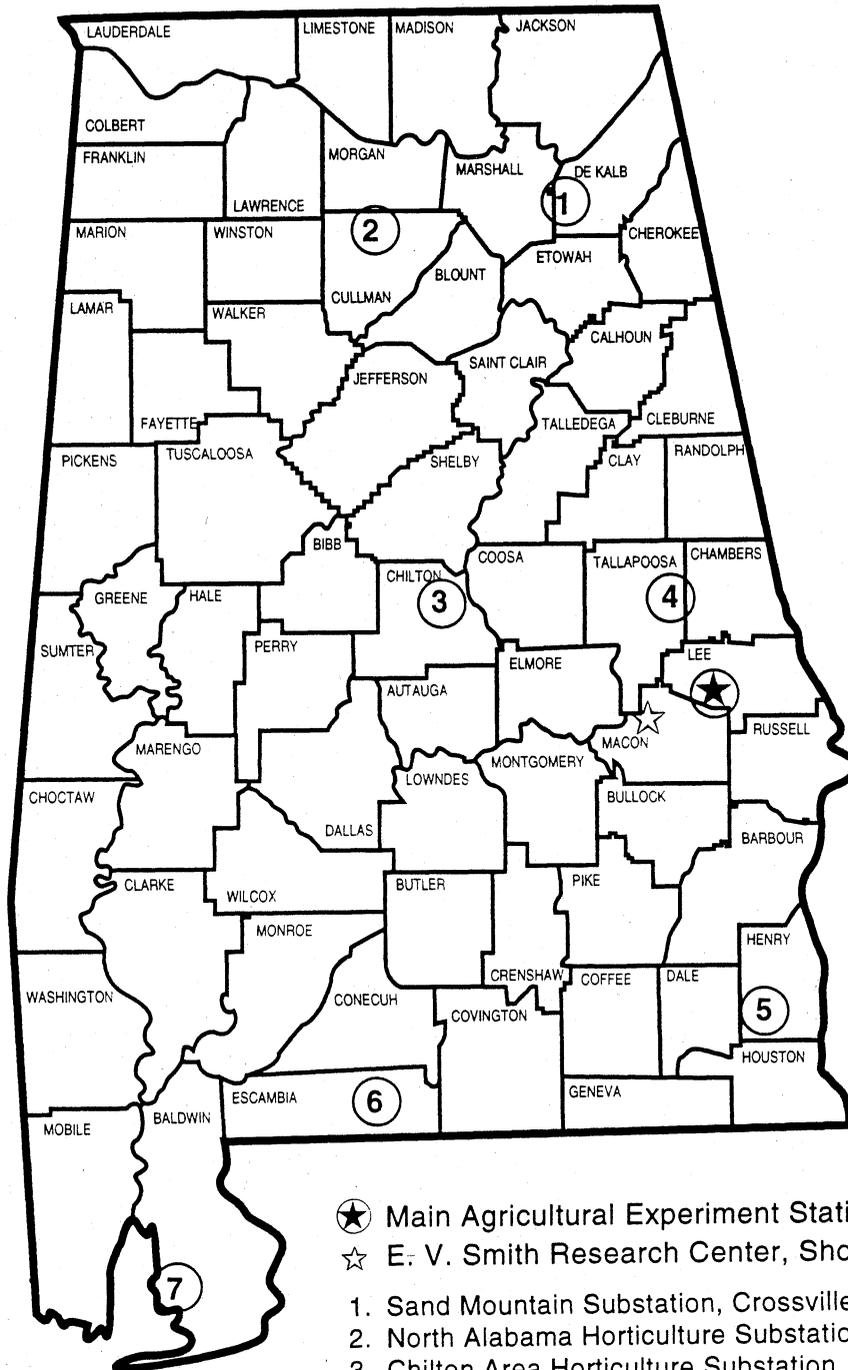
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2. North Alabama Horticulture Substation, Cullman.
3. Chilton Area Horticulture Substation, Clanton.
4. Piedmont Substation, Camp Hill.
5. Wiregrass Substation, Headland.
6. Brewton Experiment Field, Brewton.
7. Gulf Coast Substation, Fairhope.



