FALL 1999

Commercial Vegetable Variety Trials

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Auburn University
Mississippi State University
University of Missouri–Columbia
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Contents

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

Authors

Randy Akridge
Superintendent
Brewton Research Field
Brewton, AL
(334) 867-3139

Jim Bannon
Director
E.V. Smith Research Center
Shorter, AL
(334) 727-7403

Bob Bevacqua
Former Extension Agent
Southampton Extension Office,
Courtland, VA
(757) 653-2572

Bobby Boozer
Area Horticulturist
Department of Horticulture
Auburn University, AL
(205) 646-4123

Jason Burkett
Superintendent, Horticulture Unit
E.V. Smith Research Center
Shorter, AL
(334) 727-6159

Arnold Caylor
Superintendent
North Alabama Horticulture Research
Center
Cullman, AL
(256) 734-5820

Kent Cushman
Assistant Research Scientist
North Mississippi Research And
Extension Center
Verona, MS
(601) 566-2201

Tony Dawkins
Superintendent
Sand Mountain Research and Extension
Center
Crossville, AL
(256) 528-7133

Brian Gamble
Associate Superintendent
Wiregrass Research and Extension
Center
Headland, AL
(334) 693-2363

Lewis W. Jett
Assistant Professor and State Vegetable
Crops Specialist
University of Missouri–Columbia
Columbia, MO

Ronald McDaniel
Superintendent
Gulf Coast Research and Extension
Center
Fairhope, AL
(334) 928-2740

Malcomb Pegues
Assistant Superintendent
Gulf Coast Research and Extension
Center
Fairhope, AL
(334) 928-2740

Jim Pitts
Superintendent
Chilton Area Horticulture Station
Clanton, AL
(205) 646-3610

Randal Rawls
Superintendent
Upper Coastal Plain Research Center
Winfield, AL
(256) 487-2150

Eric Simonne
Assistant Professor
Department of Horticulture
Auburn University, AL
(334) 844-3018

Richard G. Snyder
Vegetable Specialist
Mississippi State University
Truck Crops Research and Extension
Center
Crystal Springs, MS

Edgar Vinson, III
Research Assistant
Department of Horticulture
Auburn University, AL
(334) 844-3041

Larry Wells
Superintendent
Wiregrass Research and Extension
Center
Headland, AL
(334) 693-2363

Introduction: Interpreting Results of Vegetable Variety Performance

Eric Simonne and Edgar Vinson

The fall 1999 variety trial regional bulletin includes results from Alabama (Auburn University), Mississippi (Mississippi State University), Missouri (Missouri State University), and Virginia (Virginia Polytechnic and State University). Trials conducted at various locations offer a wealth of information to growers, extension specialists, and seed companies. These trials also provide information such as how well a particular variety is performing throughout the southern United States as well as indicate favorite vegetable variety choices in a given area.

The main purpose of vegetable variety evaluation, however, is to give growers and seed retailers practical information on varieties and to assist them in selecting a "good" variety. Here are a few tips for interpreting the results of vegetable variety performance.

Open Pollinated or Hybrid Varieties

In general, hybrids (also referred to as F1) mature 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 (OP) varieties, and seeds cannot be collected from one crop to plant the next. Despite the advantages hybrids offer, OP varieties 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 from 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 to one another by just looking at the range of yields actually reported. However, the relative differences in performance among varieties within a location are realistic and can be used to identify the best-performing varieties.

Statistical Interpretation

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

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

There must be a minimum yield difference between two varieties before one can statistically conclude that one variety actually performs better than another. This is known as the least significant difference (lsd). When the difference in yield is less than the lsd value, one cannot conclude that there is any real difference between two varieties. For example, in the 1999 pumpkin trial at the Wiregrass Research and Extension Center, 'Spirit' yielded 20,129 pounds per acre, while 'Big Autumn' and 'EX4622827' yielded 19,060 and 12,364 pounds per acre, respectively. Since there was less than a 5,299 difference (the lsd for this test) between 'Spitit' and 'Big Autumn', there is no statistical difference between these two variety's performance. However, the yield difference between 'Spirit' and 'EX4622827' was 7,765, indicating that there is a real difference between these two varieties. From a practical point of view, producers should place the greatest importance on lsd values when interpreting results.

Testing Conditions

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

Ratings of Trials

At each location of the Alabama tests, 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 ones listed in this publication.

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

Vegetable Trials on the Web

For more vegetable variety information, visit the AU vegetable variety web page at www.ag.auburn.edu/dept/hf/faculty/esimonne. This web site provides practical information such as variety types, variety ratings, and seed sources. More detailed information on how to use the site may be found in the Alabama Cooperative Extension System circular ANR-1166 "AU Vegetable Varieties Online."

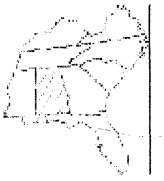
TABLE 1. SOIL TYPES AT THE LOCATIONS OF THE ALABAMA TRIALS

Location	Water-holding capacity (in./in.)	Soil type
Gulf Coast Research and Extension Center (Fairhope)	0.09 - 0.19	Malbis fine sandy loam
Brewton Research Field (Brewton)	0.12 - 0.14	Benndale fine sandy loam
Wiregrass Research and Extension Center (Headland)	0.14 - 0.15	Dothan sandy loam
Lower Coastal Plain Research Center (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 Station (Clanton)	0.13 - 0.15	Luvernue sandy loam
Upper Coastal Plain Research Center (Winfield)	0.13 - 0.20	Savannah loam
North Alabama Horticultural Research Center (Cullman)	0.16 - 0.20	Hartsells-Albertville fine sandy loam
Sand Mountain Research and Extension Center (Crossville)	0.16 - 0.18	Wynnville fine sandy loam

TABLE 2. DESCRIPTION OF RATINGS

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

'Summer Sweet #890' and 'Enterprise' Top Bell Pepper Varieties



Eric Simonne, Edgar Vinson, and Randal Rawls

A bell pepper variety trial was conducted at the Upper Coastal Plain Research Center in Winfield, Alabama (Tables 1 and 2). On May 26, six-week-old peppers were planted in 20-foot-long, double row plots with a within-row spacing of 12 inches. Black plastic and drip irrigation were used.

Following soil test recommendations, fertilization consisted of an injection of 20-20-20 (at a rate of 12 pounds per acre) on June 2, June 16, June 30, August 25, and September 15. Potassium nitrate was applied at a rate of 17 pounds per acre on June 9 and June 23. Potassium nitrate was also applied weekly from July 7 through August 18. No pesticide sprays were used.

Table 1. Ratings of the 1999 Bell Pepper Variety Trials[1]

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

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

Bell peppers were harvested on July 26, August 3, August 18, August 30, September 15, October 4, and October 21. Fruits were harvested at the mature green color stage, weighed, and graded using the standards of the *Sweet Pepper Grader's Guide* (Circular ANR-784 of the Alabama Cooperative Extension System). Early yield was determined by adding the yields of the first three harvests (Table 3), and total yield was determined by adding the yields of all harvests (Table 4).

During early harvests, 'Summer Sweet #890' gave higher yields than the standard varieties like 'Enterprise' (Table 3). However total yield for 'Summer Sweet #890' was not significantly different than that of 'Enterprise' (Table

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

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

[1]Type: F1=hybrid; OP=open pollinated. [2]Color: Bk=Black; G=Green; R=Red; P=Purple; Y=Yellow. [3]Disease tolerance/resistance; BD=Blossom Drop; BLS=Bacterial Leaf Spot; PVY=Potato Virus Y; TbEV=Tobacco Etch Virus TbMV=Tobacco Mosaic Virus; TBV=Tobamovirus; — = not found in seed catalogs; • = none.

4). Other varieties that performed well were 'Rpp 6110-vp', an experimental variety, 'Merlin', and 'Sentry'. 'Merlin' and 'Sentry' consistently placed in the top five varieties during the early and late harvests while 'Rpp 6110-vp' placed in the top three during the late harvests. Yields of the standard 'Kimg Arthur' were lower than expected.

TABLE 3. EARLY PRODUCTION AND GRADE DISTRIBUTION OF SELECTED BELL PEPPER VARIETIES AT THE UPPER COASTAL PLAIN RESEARCH CENTER

Variety	Stand %	Early marketable wt. *lbs/a*	Early fancy wt. *lbs/a*	Early US#1 wt. *lbs/a*	Early US#2 wt. *lbs/a*	Early fancy no. *no/a*	Early US#1 no. *no/a*	Early US#2 no. *no/a*
Summer Sweet #890	100	28,815	5,293	23,522	4,816	12,441	71,775	20,815
Enterprise	99	22,913	6,226	16,686	6,549	17,944	52,874	24,164
Merlin	99	19,906	8,928	10,978	8,026	21,772	38,998	28,949
Sentry	100	18,099	7,489	10,611	5,163	19,619	27,753	18,662
Ace	99	17,714	3,024	14,690	7,955	9,570	50,243	32,299
Aladdin X3R	100	16,221	3,651	12,570	5,462	8,852	39,237	20,815
Capistrano	95	15,599	2,422	13,177	4,813	5,742	39,955	16,748
ACX 209	99	15,411	4,859	10,552	3,492	14,355	36,127	12,202
Yankee Bell	100	14,685	2,928	11,757	7,070	5,981	36,127	26,078
Rpp 6110-vp	99	14,566	1,392	13,173	932	3,350	39,955	3,350
Purple Beauty	98	11,083	3,530	7,553	3,579	11,963	23,207	14,355
Colossal	96	10,144	2,302	7,843	5,960	6,460	27,275	22,968
Camelot X3R	95	8,990	3,067	5,923	2,123	8,135	23,925	10,049
Spp 6112	99	7,759	2,583	5,176	2,755	6,460	18,183	11,723
Lafayette	96	7,453	1,299	6,154	4,184	2,632	16,508	15,312
King Arthur	96	7,371	311	7,060	2,298	1,196	18,901	8,374
Bamoa	99	5,303	1,292	4,011	2,682	3,589	22,250	10,049
R^2		***0.44***	***0.41***			***0.42***		
CV		***55***	***86***			***85***		
lsd		***5,046***	***1,983***			***5,172***		

TABLE 4. TOTAL PRODUCTION AND GRADE DISTRIBUTION OF SELECTED BELL PEPPER VARIETIES AT THE UPPER COASTAL PLAIN RESEARCH CENTER

Variety	Stand %	Total marketable wt. *lbs/a*	Total fancy wt. *lbs/a*	Total US#1 wt. *lbs/a*	Total US#2 wt. *lbs/a*	Total fancy no. *no/a*	Total US#1 no. *no/a*	Total US#2 no. *no/a*	Individual fancy fruit wt. *lb*
Summer Sweet #890	100	41,506	5,728	35,779	9,262	14,355	257,194	96,418	0.41
Enterprise	99	37,782	6,226	31,556	12,444	17,944	235,901	113,405	0.36
Rpp 6110-vp	99	32,739	1,392	31,347	23,803	3,350	209,344	136,373	0.40
Sentry	100	30,465	8,018	22,446	9,694	21,772	220,828	85,652	0.39
Merlin	99	29,092	8,928	20,164	14,716	21,772	170,346	118,190	0.40
Purple Beauty	98	28,611	3,530	25,081	24,002	11,963	196,664	133,502	0.28
Aladdin X3R	100	28,153	3,651	24,502	17,880	8,852	232,073	129,434	0.40
Yankee Bell	100	26,554	2,928	23,626	19,560	5,981	176,567	124,171	0.42
Ace	99	26,115	3,024	23,091	13,294	9,570	199,056	105,988	0.30
Capistrano	95	24,670	2,422	22,248	12,033	5,742	166,040	104,074	0.42
Colossal	96	22,142	2,302	19,840	20,631	6,460	172,260	118,190	0.37
Lafayette	96	18,885	1,373	17,512	21,836	3,828	134,698	123,453	0.36
Camelot X3R	95	17,717	3,067	14,649	16,581	8,135	146,182	133,262	0.37
Spp 6112	99	16,696	2,966	13,730	16,047	7,656	120,343	96,179	0.41
King Arthur	96	15,375	311	15,064	13,563	1,196	116,993	90,437	0.22
Bamoa	99	14,941	1,292	13,649	12,353	3,589	179,438	66,272	0.38
R^2		***0.43***	***0.43***			***0.44***			
CV		***38***	***84***			***82***			
lsd		***6,264***	***1,979***			***5,172***			

Variety Evaluation of Greenhouse Bell Peppers in South Mississippi

Richard G. Snyder and Jim Curtis

A trial of six hybrid greenhouse bell peppers varieties was performe at the Truck Crops Branch Experiment Station at Crystal Springs, Mississippi, in the fall of 1996.

Seedlings were transplanted on August 13. There were four plants per bag, and 16 plants per plot, with four replications. The experimental design was a randomized complete block. Data collected included marketable numbers and weights of fruit, and cull numbers and weights of fruit. Total weight of fruit was calculated by adding marketable and cull fruit. Percent marketable fruit was determined from fruit weights. Data were analyzed by analysis of variance, with mean separation by Duncan's New Multiple Range Test.

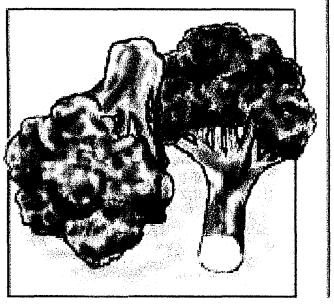
'Alberto' had significantly higher marketable weight than any other pepper variety (see table). 'Alberto' also had significantly higher marketable number and marketable weight of fruit than 'Reflex', 'Locas', or 'Evident'. 'Alberto', 'Samanta', and 'Gold Flame' had significantly lower cull weight and number than the other varieties. 'Reflex' and 'Evident' were the highest in cull weights and numbers. 'Alberto' also had the highest per cent marketableweight of fruit. There were no significant differences in total numbers or weights of fruit. However, both 'Alberto' and Evident' had a tendency to be highest in both factors. Overall, 'Alberto' appears to be the best choice of these newer hybrid pepper varieties.

Yield and Quality of Fruit From a Fall Greenhouse Pepper Variety Trial at the Truck Crops Branch Experiment Station

Variety	Marketable number[1]	Marketable weight *lbs*	Cull number	Cull weight *lbs*	Percent marketable weight	Total weight *lbs*
Alberto	168 a	87 a	160 c	55 c	61 a	142
Reflex	112 c	47 c	300 a	81 a	37 d	128
Samanta	152 ab	68 b	179 c	58 c	54 b	126
Gold Flame	147 ab	67 b	187 c	55 c	54 b	122
Locas	133 bc	59 bbc	259 b	72 b	45 c	131
Evident	134 bc	60 bc	315 a	84 a	41 cd	145
Significance[2]	**	**	**	**	**	***ns***

[1] Fruit was harvested from 16 plants.

[2] Numbers followed by different letters are significantly different according to Duncan's New Multiple Range Test; ** indicates significant at p< or =0.01; * indicates p< or =0.05; ns indicates not significant at p=0.05.



'Nomad' and 'Legacy' Top Broccoli Varieties in 1999

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

A broccoli variety trial was conducted using plastic mulch and drip irrigation at the Wiregrass Research and Extension Center in Headland, Alabama (Tables 1 and 2). Broccoli was transplanted in staggered double rows on August 12. This created a stand of approximately 27,000 plants per acre.

Fertilizer was applied according to the recommendations of the Auburn University Soil Testing Laboratory. Pesticides were applied according to current recommendations for pest and weed control in vegetable production found in *IPM Commercial Vegetables: Insect, Disease, Nematode and Weed Control Recommendations* (Publication 2000IPM-2 from the Alabama Cooperative Extension System).

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

Variety	Type[1]	Seed source	Earliness	Disease claims[2]
Packman	F1	Petoseed/ Stokes	78	—
Nomad	F1	Sakata	—	—
Legacy	F1	Asgrow	—	—
RBR-45-vp	F1	Novartis	—	—
Coronado	OP	Asgrow	—	—
Laguna	F1	Novartis	88	DM
Everest	F1	Novartis	85	DM
Signal	F1	Novartis	80	DM
Windsor	F1	Novartis	85	DM

[1] Type: F1=hybrid; OP=open pollinated. [2] Disease claims: DM=Downy Mildew. — = not found; from seed catalogs.

Between August 30 and November 25, fertilization consisted of injections of seven pounds of N per acre alternatively from a liquid $Ca(NO_3)_2$ solution (9-0-0-11) 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.

Table 1. Ratings of the 1999 Broccoli Variety Trials[1]

Location	WREC
Weather	5
Fertility	5
Irrigation	5
Pests	5
Overall	5

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

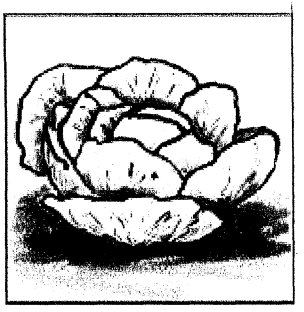
Heads were harvested when they reached six inches in diameter. Plants were harvested twice weekly between October 19 and November 29. Marketable weight (in numbers of 23-pound cartons) and corresponding number of heads were recorded (Table 3).

Several varieties performed better than 'Packman' which is the standard variety. Among those varieties are 'Nomad', 'Legacy', and an experimental variety, 'RBR-45-vp' by Novartis.

Table 3. Yield of Selected Broccoli Varieties

Variety	Marketable 23-lb cart *no/a*	Marketable yield *lbs/a*	Marketable heads[1] *no/a*	Stand *%*
Nomad	674	15,503	35,928	100
Legacy	659	15,177	19,379	100
RBR-45-vp	568	13,065	31,138	99
Coronado	502	11,566	22,646	100
Laguna	460	10,600	20,033	99
Packman	456	10,495	23,734	96
Everest	416	9,581	18,944	87
Signal	391	8,993	20,468	83
Windsor	362	8,339	20,250	99
R^2		***0.59***	***0.72***	
CV		***20***	***17***	
lsd		***3,388***	***5,748***	

[1] Number of marketable heads may be greater than the 27,000 plants per acre ideals stand when lateral florets develop to a marketable size.



'Tendersweet' Cabbage in Top Three at Wiregrass and Sand Mountain

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

A cabbage variety trial was conducted at the Horticulture Unit at the Wiregrass Research and Extension Center (WGREC) in Headland, Alabama, and at the Sand Mountain Research and Extension Center (SMREC) in Crossville, Alabama (Tables 1 and 2). At both locations seven-week-old transplants were planted onto 20-foot-long double-row plots on August 24 at WGREC and on August 19 at SMREC. Within-row spacing was one foot. This resulted in a stand of 17,400 plants per acre.

At WGREC, 500 pounds of 13-13-13 and two tons of broiler litter per acre were preplant applied on August 13. Seven pounds per acre of N as potassium nitrate were injected weekly on September 7, September 17, October 8, October 15, and October 30. 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 September 10, September16, and October 2.

At SMREC preplant fertilization consisted an application of 13-13-13 at a rate of 300 pounds per acre on August 19. Sidedresses were made by injecting calcium nitrate at a rate of 180 pounds per acre on September 8. Devrinol herbicide was applied at rate of four pounds per acre on August 19. Insecticides used were Asana (at a rate of eight ounces per acre) on September 9, October 12, and October 22. Fungicides used were Belate (at a rate of 0.5 pound per acre) and Bravo (at a rate of one quart per acre) on September 8.

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).

Table 1. Ratings of the 1999 Cabbage Variety Trials[1]

Location	WGREC	SMREC
Weather	5	5
Fertility	5	5
Irrigation	5	5
Pests	5	5
Overall	5	4

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

Table 2. Seed Source, Earliness, and Disease Resistance/Tolerance of Selected Head Cabbage Varieties

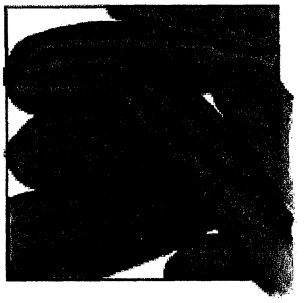
Variety	Type[1]	Head color	Seed source	Days to harvest	Disease tolerance/resistance[2]
Emblem	F1	Green	Rupp Seeds	85	BR, FY, TB
Rio Verde	F1	Green	Novartis	92	BLS, FY
Augusta	F1	Green	Novartis	82	FY
Tendersweet	F1	Green	Johnny's	71	—
Blue Dynasty	F1	Green	Asgrow	75	BR, FY

3). 'Blue Thunder', 'Blue Dynasty', and 'Tendersweet' were the top three varieties though several other varieties showed similar yields. At SMREC 'Rio Verdi', 'August', and 'Tendersweet' were the top three varieties followed by 'Blue Dynasty' and 'Constanza'. These varieties had significantly higher marketable yields than the remaining varieties.

TABLE 3. PERFORMANCE OF SELECTED CABBAGE VARIETIES

Variety	Marketable 50-lb cart *no/a*	Marketable yield *lbs/a*	Marketable heads[1] *no/a*	Stand *%*
Wiregrass Research and Extension Center				
Blue Thunder	564	25,952	6,162	•
Blue Dynasty	551	25,344	8,468	•
Tendersweet	540	24,868	4,014	•
Pennant	514	23,674	7,594	•
Constanza	490	22,568	8,462	•
Izalco	468	21,612	7,680	•
Rio Verde	427	19,660	5,294	•
Bayou Dynasty	412	19,572	6,292	•
Augusta	366	16,926	6,076	•
Cardinal	299	13,790	4,448	•
Emblem	286	13,258	9,112	•
Red Dynasty	214	9,860	3,688	•
R^2	***0.53***	***0.52***	***0.50***	
CV	***28***	***28***	***31***	
lsd	***171***	***7,854***	***2,734***	
Sand Mountain Research and Extension Center				
Rio Verde	584	29,222	6,968	100
Augusta	457	22,842	6,968	100
Tendersweet	453	22,668	5,444	100
Blue Dynasty	434	21,710	6,750	100
Constanza	405	20,251	6,097	100
Izalco	274	13,718	5,226	100
Bayou Dynasty	241	12,042	5,879	100
Emblem	217	10,866	2,831	100
Blue Thunder	204	10,212	3,920	100
Pennant	184	9,211	3,920	100
Red Dynasty	106	5,291	3,266	100
Cardinal	68	3,419	1,524	100
R^2	***0.53***	***0.53***	***0.50***	
CV	***28***	***28***	***31***	
lsd	***343***	***7,873***	***2,740***	

• = none.



Trellising Improves Marketability but not Yield of 'Thunder' Cucumber

Kent Cushman and Thomas Horgan

'Thunder' cucumber plants were grown in a replicated trial using ground or trellis culture at the Horticulture Research and Education Unit in Verona, Mississippi. There was no significant difference between treatments for total marketable yield or for any of the cull categories. The additional labor and expense of constructing trellising, therefore, may not be justified. However, percent marketable fruit and average weight per cucumber were significantly greater for trellis-grown plants.

Plots were direct seeded by hand on June 22 in constructed, raised plant beds. Seed were planted one inch deep and six inches apart and then thinned to one plant per foot. Beds consisted of a sandy topsoil amended with ammoniated pine bark mulch the previous year.

Before planting, pellitized lime was applied at the rate of one ton per acre. Preplant fertilizer was broadcast at the rate of 80 pounds of N, 150 pounds of P_2O_5, and 200 pounds of K_2O per acre. Soluble fertilizer was applied through the drip irrigation system by injecting a concentrated solution of $CaNO_3$, which contributed an additional 40 pounds of N per acre during the growing season.

Plots were 24 feet long by six feet wide. The experimental design was a randomized complete block design with four replications. Trellising was constructed with a six-foot-high plastic mesh netting attached to wooden poles placed every six feet. Water was applied as needed to provide approximately one acre-inch per week.

Pesticides were applied with a backpack-type mister on a seven- to ten-day schedule. Curbit EC herbicide was applied at the rate of 3.5 pints per acre (1.1 pound of ethalfluaralin per acre). The insecticides Asana XL at 9.6 ounces per acre (0.05 pound of esfenvalerate per acre) or Thiodan 3EC at two quarts per acre (1.5 pounds of endosulfan per acre) were sprayed as needed for insect control. The fungicides Quadris at six ounces per acre (0.1 pound of azoxystrobin per acre) or Bravo Weather Stik at two pints per acre (1.5 pounds of chlorothalonil per acre) were applied as a tank-mix insecticide for disease control.

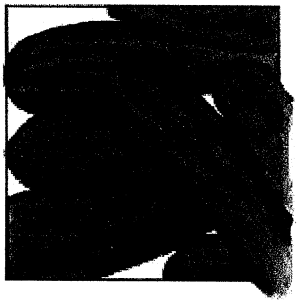
Harvest began on August 11 and ended September 10 for a total of 13 harvests. Plants were normally picked on Monday, Wednesday, and Friday. Fruit from each plot was separated into marketable and cull and then counted and weighed.

Slicing cucumbers are normally grown on the ground with no attempt to support vines on a trellis. Results of this study showed that trellised cucumbers had a significantly greater percent marketable fruit and greater fruit weight than those grown on the ground (see table). Harvest and spray operations for trellised cucumbers were more convenient than for those grown on the ground. Trellising, however, did not result in greater yields and, therefore, may not justify the additional labor and expense of constructing trellises.

Cucumber Yield: Ground Vs. Trellis Culture, Horticulture Research and Education Unit, Verona, Mississippi

Variety	Marketable			Cull		
	Yield	Percent	Weight	Misshapen[1]	Poor pollination[2]	Small[3]
	lbs/a		*oz/fruit*	%	%	%
Ground	64,170	65	11.3	18.9	7.5	7.1
Trellis	64,150	71	11.8	13.8	7.2	5.8
lsd	***ns***	***5***	***0.2***	***ns***	***ns***	***ns***
R^2		***0.93***	***0.96***			
CV		***3***	***0.8***			

[1] Curved or crooked. [2] Poor pollination, bottleneck-shaped fruit. [3] Short, mature, but unmarketable. ns=not significant.



Variety Evaluation of Greenhouse Cucumbers in South Mississippi

Richard G. Snyder, Jim Curtis, and Larry Harkins

In the spring of 1997, a greenhouse cucumber variety trial was conducted at the Truck Crops Branch Experiment Station in Crystal Springs, Mississippi.

Seedlings were transplanted on January 7. There were two plants per two-cubic-foot pine bark-filled bag, and eight plants per plot, with four replications. The experimental design was completely randomized. Data collected included marketable number, marketable weight, cull number, and cull weight. In addition culls were separated into several categories of common physiological disorders. Percent marketable fruit by weight of fruit was calculated. Data were analyzed by analysis of variance, with mean separation by Duncan's New Multiple Range Test.

'Picobello' had the highest marketable number of fruit (Table 1). This is most likely due to the fact that this is a smaller fruit type than the other types tested, thereby producing many more fruit. 'CA230' and 'CA774' tended to have the highest number of fruit among the larger fruited types, though this was not statistically significant. 'Picobello' also had significantly higher marketable weight of fruit than 'Falco, 'Titleist', or 'Pinnacle'. This is interesting in light of the fact that the fruit of 'Picobello' are much smaller.

'Picobello', 'Pinnacle', and 'CA774' had significantly fewer culls than the others, both by weight and number. 'Picobello' also clearly had the highest percent marketable by fruit weight, followed by 'CA774'.

'Picobello' also performed much better than the other varieties in terms of physiological disorders of the fruit (Table 2). This small variety had significantly fewer bent or curved fruit, bottleneck fruit, tapered fruit, and small fruit than the other varieties. However, 'Picobello' had more fruit with poor skin than the others. There were no significant differences in radial ribbing among varieties, although 'Picobello' and 'Pinnacle' tended to have the fewest fruit with this disorder. All of these variables are based on fruit number.

Overall, 'Picobello' performed the best of these cucumber varieties. It should be considered when choosing a variety of European cucumber, especially in a market where a smaller variety may be preferred.

Table 1. Yield and Quality of Fruit From A Spring Greenhouse CucumberVariety Trial at the Truck Crops Branch Experiment Station in Crystal Springs, Mississippi[1]

Variety	Marketable number *no/plot*	Marketable weight *lbs/plot*	Cull number *no/plot*	Cull weight *lbs/plot*	Percent marketable by weight
Falco	173 b	160 b	257 a	186 a	46 d
CA 230	209 b	195 ab	275 a	188 a	51 cd
CA 774	206 b	193 ab	207 b	145 c	57 b
Titleist	185 b	168 b	256 a	17 ab	49 cd
Picobello	620 b	216 a	207 b	74 d	75 a
Pinnacle	183 b	169 b	216 b	153 bc	52 bc
Significance[2]	**	*	**	**	**

[1] Yields are based on eight plants per plot.

[2] Numbers followed by different letters are significantly different according to Duncan's New Multiple Range Test; ** indicates significant at p< or =0.01; * indicates p< or =0.05; ns indicates not significant at p=0.05.

TABLE 2. PHYSIOLOGICAL DISORDERS AND SIZE OF FRUIT FROM A SPRING GREENHOUSE CUCUMBER VARIETY TRIAL AT THE TRUCK CROPS BRANCH EXPERIMENT STATION IN CRYSTAL SPRINGS, MISSISSIPPI[1]

Variety	Bent or curved fruit	Bottleneck fruit	Tapered fruit	Radial ribbing	Poor skin	Small fruit	Large fruit
	no	*no*	*no*	*no*	*no*	*no*	*no*
Falco	174 a	41 a	75 abc	2	5 b	116 bc	2 b
CA 230	167 a	24 b	94 a	3	6 b	142 a	3 b
CA 774	128 b	26 b	62 c	8	4 b	102 c	4 b
Titleist	169 a	21 b	86 ab	6.5	6 b	128 ab	2 b
Picobello	93 c	10 c	40 d	2	11 a	22 d	48 a
Pinnacle	121 b	42 a	66 bc	2	3 b	96 c	3 b
Significance[2]	**	**	**	***ns***	*	**	**

[1] Yields are based on eight plants per plot.

[2] Numbers followed by different letters are significantly different according to Duncan's New Multiple Range Test; ** indicates significant at p< or =0.01; * indicates p< or =0.05; ns indicates not significant at p=0.05.

'Mesilla' Jalapeno Sizzles at Two Locations

Eric Simonne, Edgar Vinson, Bobby Boozer, Arnold Caylor, and Jim Pitts

Hot pepper varieties trials were conducted at the E.V. Smith Research Center (EVSRC) in Shorter, Alabama, and at the Chilton Area Horticulture Station (CAHS) in Clanton, Alabama (Tables 1 and 2). At both locations, hot peppers were planted in four-foot-long, double-row plots with a within-row spacing of 12 inches. Each plot contained eight plants. Plants were grown on plastic mulch with drip irrigation. White plastic was used at EVSRC and black at CAHS. Six-week-old peppers were transplanted on June 1 at EVSRC and April 27 at CAHS.

At EVSRC, beds were fumigated with 400 pounds per acre of Pic Brom 25 on April 8. Preplant fertilizer applied was 15.5-0-0 calcium nitrate at a rate of 387 pounds per acre on March 24. Fertilization consisted of weekly, alternate injections of 9-0-0-11 and 20-20-20 at a rate of 3.5 pounds of nitrogen per acre. Insect control consisted of applications of Manex (at a rate of 1.6 quarts per acre) on June 10, June 29, July 3, July 9, July 17, and

Table 1. Ratings of the 1999 Jalapeno Variety Trials[1]

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

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

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

Variety	Type[1]	Classification	Seed source	Days to harvest	Pod shape	Color[2]	RSR[2]	Disease claims[4]
Ancho San Luis	OP	Ancho	Petoseed	78	Heart-shaped; Blunt point	G-R	1,500-4,000	—
Cherry Bomb	F1	Hot Cherry	Petoseed	78	Oblate or Globe-shaped	G-R	2,500-5,000	TbMV
Mesilla	F1	Cayenne	Petoseed	87	2-celled; Wrinkled, long	G-R	2000-4000	TbP,PVY,TEV
Mitla	F1	Jalapeno	Petoseed	74	Bullet-Shaped	G-R	4,000-5,000	—
Mulato Isleno	OP	Poblano	Petoseed	89	Tapered end	G-Br	500-1000	—
Ole	OP	Jumbo Jalapeno	Ferry-Morse	80	Tapered end	G-R	—	—
Papri King	OP	Paprika	Petoseed	100	Flat-tapered	G-R	500-1,000	—
Passilla Bajio	OP	Cayenne	Petoseed	77	Long:2-celled	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,Blunt end	Y-O	5,000-8,000	TbMV
Thai Dragon	F1	Thai	Burpee	70	Tapered end	G-R	—	—
Volcano	F1	Hungarian Wax	Ferry-Morse	63	Tapered	Y-R	—	TbMV

[1] Type: OP=open pollinated; F1=hybrid. [2] Color: G= green; R= red; Br=brown. [3] RSR = Relative Scoville Rating; the higher the rating, the hotter the variety. [4] Disease claims: TbMV= Tobacco Mosaic Virus; TEV= Tobacco Etch Virus; PVY=Potato Virus Y; — = not found; from seed catalogs.

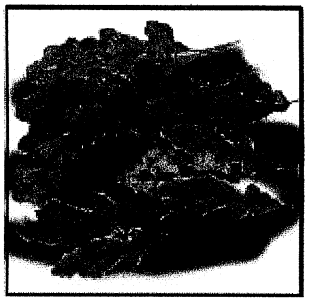
July 24; Dipel 4L (at a rate of two pints per acre) on June 29 and July 24; and Endosulfan (at a rate of 2.5 pints per acre) on June 10 and July 23 and (at a rate of two pints per acre) on June 7.

At CAHS, fertilization consisted of a pre-plant application of 50 pounds of nitrogen per acre as 13-13-13. After planting, six pounds of nitrogen per acre were injected weekly as calcium nitrate [$Ca(NO_3)_2$] beginning on May 6 and ending August 16. Insect control was provided by applications of Spintor (at a rate of four ounces per acre). Fungicides used were Kocide (at a rate of two pounds per acre) and Manneb (at a rate of 1.5 pounds per acre). Insecticides and fungicides were applied on May 24, May 27, June 4, June 10, and June 18.

Peppers were hand harvested on July 13 at EVSRC and on July 16, July 23, August 5, August 18, September 15, and September 28 at CAHS. Total yield and the weight of 25 pods were determined (Table 3).

TABLE 3. PERFORMANCE OF SELECTED HOT PEPPER VARIETIES

Variety	Type	Stand %	Total marketable weight *lbs/a*	25-pod weight *lb*
E.V. Smith Research Center				
Santa Fe Grande	Jalapeno	•	47,448	0.60
Mesilla	Jalapeno	•	20,466	0.20
Mitla	Jalapeno	•	20,427	0.20
Picante	Jalapeno	•	15,399	0.20
Volcano	Wax	•	38,339	0.40
Thai Dragon	Cayenne	•	34,209	0.10
Mesilla	Cayenne	•	20,466	0.20
Pasilla Bajio	Cayenne	•	5,690	0.10
Cherry Bomb	Cherry	•	18,258	0.20
Papri King	Paprika	•	15,104	0.20
Mulato Isleno	Ancho	•	10,158	0.30
Ancho San Luis	Ancho	•	8,325	0.30
R^2			***0.47***	
CV			***74***	
lsd			***10,788***	
Chilton Area Horticulture Substation				
Volcano	Wax	100	32,920	0.15
Mesilla	Cayenne	100	31,569	0.15
Thai Dragon	Cayenne	98	9,840	0.02
Pasilla Bajio	Cayenne	96	9,571	0.07
Mitla	Jalapeno	100	26,654	0.10
Picante	Jalapeno	96	21,734	0.09
Santa Fe	Jalapeno	94	17,265	0.07
Ole	Jalapeno	98	8,460	0.07
Papri King	Paprika	94	19,670	0.10
Ancho San Luis	Ancho	100	15,047	0.17
Mulato Isleno	Ancho	94	12,292	0.11
Cherry Bomb	Cherry	100	14,688	0.09
R^2		***0.24***	***0.85***	
CV		***5.2***	***20***	
lsd		***0.88***	***7,965***	



'Florida Broadleaf' Performs Well Among Mustard Green Varieties

Eric Simonne, Edgar Vinson, and Randy Akridge

Leafy green variety trials were conducted at the Brewton Research Field (BRF) in Brewton, Alabama (Tables 1 and 2). Turnip, mustard, kale, and collards were direct seeded on September 16 onto 20-foot-long, five-foot-wide plots. Plant population was approximately 500,000 plants per acre.

Soils were fertilized according to the recommendations of the Auburn University Soil Testing Laboratory. Fertilization consisted of preplant applications of 400 pounds of 5-10-15 with micronutrients per acre. After planting, leafy greens received 60 pounds of nitrogen per acre as ammonium nitrate (NH_4NO_3) on September 28 and October 15.

Leafy greens were harvested when they reached marketable size (Table 3). Harvest dates were November 3 for turnips, mustards, and kale, and December 8 for collards. Leaf yields were expressed in 30-pound bushels.

Table 1. Ratings of 1998 Leafy Greens Variety Trial[1]

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

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

Collards and kale varieties showed no significant differences in yield. Mustard and turnip varieties showed little differences. Of the four turnip varieties tested, 'Tokyo Cross' had a significantly lower yield than the other varieties.

Table 2. Seed Source and Earliness of Selected Leafy Green Varieties

Variety	Type	Crop	Seed source	Days to harvest
White Egg	OP	Turnip	Rupps	50
Tokyo Cross	F1	Turnip	Takii	35
Purple top White Globe	OP	Turnip	Asgrow,Stokes	60
Seven Top	OP	Turnip	Asgrow,Stokes	45
Shogoin	OP	Turnip	Rupps	45
Red Giant	OP	Mustard	Harris Seed	40
Green Wave	OP	Mustard	Stokes	45
Florida Broad Leaf	OP	Mustard	Asgrow,Stokes	50
Southern Giant Curled	OP	Mustard	Petoseed	45
Flash Hybrid	F1	Collard	A&C,Stokes	73
Georgia	OP	Collard	Stokes	80
Top Bunch	F1	Collard	Sakata	70
Vates	OP	Collard	Stokes	56
Champion	OP	Collard	Harris Seed	75
Morris Heading	OP	Collard	Asgrow	80
Dwarf Siberian	OP	Kale	Abbott and Cobb	—

[1] Type: OP=open pollinated; F1=hybrid. — = not found; from seed catalogs.

Table 3. 1999 Leaf Yield of Leafy Green Vegetables, Brewton Experimental Field

Variety	Crop	Leaf yield[1] *bu/a*
Flash Hybrid	Collard	1,401
Vates-collard	Collard	1,216
Champion	Collard	937
Dwarf Siberian	Kale	816
Dwarf Blue	Kale	589
Vates–Kale	Kale	510
Florida Broadleaf	Mustard	1,223
Southern Giant Curled	Mustard	921
Green Wave	Mustard	896
Red Giant	Mustard	777
Seven Top	Turnip	975
Shogoin	Turnip	922
Purple Top White Globe	Turnip	866
Tokyo Cross	Turnip	592
R^2		***0.78***
CV		***16***
lsd		***368***

[1] Yield is given as 30-pound bushels.

Okra Cultivar Evaluation for Fall Production in North Mississippi

Kent Cushman and Thomas Horgan

Seven okra cultivars were grown in a replicated study at the Horticulture Research and Education Unit in Verona, Mississippi.

Seeds were direct seeded by hand on July 8 in raised, constructed plant beds. Beds consisted of a sandy topsoil amended with ammoniated pine bark mulch the previous year. Seed were planted one inch deep and three inches apart and then thinned to one plant per foot two weeks later.

The experimental design was a randomized complete block design with four replications. Plots were 10 feet long and three feet wide. Water was applied as needed to provide approximately one acre-inch per week.

Before planting, lime was applied at the rate of 1.5 tons per acre and preplant fertilizer was broadcast at the rate of 40 pounds of nitrogen (N), 150 pounds of phosphorus (P_2O_5), and 200 pounds of potassium (K_2O) per acre. Soluble fertilizer was applied as a sidedress during the growing season. It was injected as a concentrated fertilizer solution of calcium nitrate through the drip irrigation system and contributed an additional 40 pounds of N per acre. Boron was applied once through the drip irrigation system at the rate of one pound per acre.

Trifluralin 4EC herbicide was applied at 1.5 pints per acre (0.75 pound of trifluralin per acre) with a backpack sprayer before seeding. The plots were tilled prior to seeding and all remaining weeds were hoed or pulled by hand.

Pesticides were applied with a backpack-type mister on a seven- to 10-day schedule. The insecticides Asana XL at 9.6 ounces per acre (0.05 pounds of esfenvalerate per acre) or Thiodan 3EC at a rate of two quarts per acre (1.5 pounds of endosulfan per acre) were sprayed as needed for insect control.

Harvest began August 31 and ended October 20 for a total of 19 harvests. Pods were harvested when they reached about 3.5 inches in length. Larger pods were removed from plants and counted as culls. Plants were normally picked on Monday, Wednesday, and Friday. Pods from each plot were separated into marketable and cull and then counted and weighed.

'Annie Oakley II', 'Cajun Delight', and 'Green Best' performed well in the trials when planted late in the season (see table). Early yield of 'Annie Oakley II' was significantly greater than that of 'Clemson Spineless' but not significantly different than that of 'Cajun Delight', 'Green Best', and 'Burgundy.' There were no significant differences in total yield for any of the entries. In trials conducted by Auburn University at two locations in Alabama, 'Annie Oakley II' and 'Cajun Delight' had the greatest early and total yields in 1999.

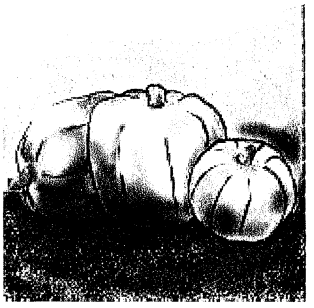
Early and Total Marketable Yield of Seven Okra Cultivars Grown in North Mississippi

Variety	Early marketable yield[1]	Total marketable[2] Yield[3]	Total marketable[2] Weight
	lbs/a	*%*	*oz/pod*
Annie Oakley II	6,090	97	0.34
Cajun Delight	5,120	96	0.35
Green Best	5,080	94	0.39
Burgundy	4,400	96	0.38
Dwarf Green Long Pod	3,680	93	0.38
Clemson Spineless	3,130	97	0.40
La. Green Velvet	2,610	93	0.33
R^2	***0.56***	***0.61***	***0.83***
LSD	***2,010***	***2.3***	***0.025***
CV	***31***	***2***	***5***

[1] Total of 11 harvests.

[2] Total of 19 harvests.

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



Latest Pumpkin Varieties Show Tolerance to Powdery Mildew

Eric Simonne, Edgar Vinson, Ronald McDaniel, Malcomb Pegues, Larry Wells, Brian Gamble, Arnold Caylor, and Tony Dawkins

Pumpkin variety trials were conducted at the Gulf Coast Research and Extension Center (GCREC) in Fairhope, Wiregrass Research and Extension Center (WREC) in Headland, North Alabama Horticulture Research Center (NAHRC) in Cullman, and Sand Mountain Research and Extension (SMREC) in Crossville (Tables 1 and 2).

Planting dates were July 16 at GCREC, July 2 at WREC, June 23 and July 1 at NAHRC, and July 21 at SMREC. Pumpkins were direct seeded in hills five feet apart onto 60-foot-long plots.

Soils were fertilized according to the recommendations of the Auburn University Soil Testing Laboratory. Current recommendations for pest and weed control in vegetable production in Alabama may be found in *IPM Commercial Vegetables: Insect, Disease, Nematode and*

Table 1. Ratings of 1999 Pumpkin Variety Trials[1]

Location	GCREC	WREC	NAHRC	SMREC
Weather	5	5	5	5
Fertility	5	5	5	5
Irrigation	5	5	5	5
Pests	4	5	5	5
Overall	5	5	4	5

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

Table 2. Seed Source, Relative Earliness, and Fruit Size of Selected Pumpkin Varieties

Variety	Type[1]	Seed source	Maturity *days*	Fruit weight *lbs/a*
Appalachian	F1	Rupp Seeds	90	0-25
Baby Bear	OP	Rupp Seeds	105	1-2
Big Autumn	F1	Novartis	90	15-20
Early Autumn	OP	Rupp Seeds	100	10-14
EXT-1853	F1	Asgrow	—	3-4
EXT-1854	F1	Asgrow	—	3-4
EXT-4612297	F1	Asgrow	—	3-7
EXT-4622827	F1	Asgrow	—	10-14
Gold Fever	OP	Rupp Seeds	90	19-29
Gold Rush	OP	Rupp Seeds	120	30-40
Gold Strike	F1	Rupp Seeds	110	25-40
HMX-4696	F1	Harris Seeds	—	—
Hybrid Pam	F1	Seedway	90	3-7
Jack-of-all-Trades	F1	Rupp Seeds	90	10-12
Jack-Be-Quick	OP	Rupp Seeds	95	0.25
Little Lantern	OP	Stokes	100	1-2
Long Island Cheese*	OP	Johnny's	108	8-10
Magic Lantern	F1	Harris Seeds	115	16-24
Merlin	F1	Harris Seeds	115	15-25
Peek-A-Boo	F1	Rupp Seeds	90	3-4
Racer	F1	Johnny's	85	12-18
Rocket	F1	Johnny's	—	15-25
RWS-6260-vp	F1	Novartis	—	—
RWS-5668	F1	Novartis	—	—
Small Sugar	F1	Stokes, Asgrow	100	7
Spirit	F1	Stokes	—	15-25
Spookie	OP	Harris Seeds	105	5-6
Sugar Treat	F1	Rupp Seeds	—	1-10
SVR-4962333	F1	Asgrow	—	10-12
SVR-962342	F1	Asgrow	—	10-12
Tallman	OP	Stokes	110	15-25
Tom Fox	OP	Johnny's	110	15-25
Trick-or-Treat	F1	Petoseed	98	10-12
Valenciano*	OP	Johnny's	—	1-10
Wee-Be-Little	F1	Novartis	110	0.25

[1] Type: F1=hybrid; OP=open pollinated.
— = not found; from seed cataloges. * white-skinned varieties.

Weed Control Recommendations (Publication 2000IPM-2 from the Alabama Cooperative Extension System).

At GCREC, preplant fertilization consisted of 500 pound per acre of 4-12-12 applied on July 6. Fertilization consisted of two applications of ammonium nitrate on July 30 and August 11 at rates of 40 and 60 pounds per acre of nitrogen, respectively. Insect control was provided by applications of Sevin (at a rate of two pints per acre) on August 13 and August 26, and Asana XL (at a rate of six ounces per acre) on September 8 and September13. Fungicides used were Bravo (at a rate of 1.5 pints per acre) on August 13, and weekly applications of Benlate 50 WP (at a rate of 0.5 pound per acre) from August 6 through September 13. Weed control consisted of applications of Poast (at a rate of 1.5 pints per acre), Finale (at a rate of four quarts per acre) on July 30 and August 6, and Curbit (at a rate of two quarts per acre) on July 16.

At WREC, preplant fertilization consisted of 600 pounds per acre of 13-13-13 applied on June 7. Plants were sidedressed with 60 pounds of N per acre as ammonium nitrate on August 2. Insecticides used were Asana XL (at a rate of nine ounces per acre) on August 30, September 6, September 14, and September 28. Bravo 720 fungicide was applied (at a rate of 1.5 pints per acre) on August 5, August 11, August 30, September 4, September 9, and September 25.

At NAHRC, fertilization consisted of weekly applications of ammonium nitrate (at a rate of 15 pounds per acre) from July 8 through August 20. Command and Gramoxone herbicides were applied on July 12 at rates of two and three pints per acre, respectively. Insect control consisted of applications of Ambush (at a rate of 12 ounces per acre) on July 15 and July 22, and Asana XL (at a rate of 9.6 ounces per acre) on August 5, August 16, August 26, September 3, and September 17. Fungicides used were Bravo (at a rate of 32 ounces per acre) on July 15 and July 22: Bravo/Ridomil (at rate of one pound per acre) on August 5 and August 16: Bravo-Ultrex (at a rate of 2.5 pounds per acre) on August 26, September 3, and September10; Bayleton (at a rate of four ounces per acre on July 15, August 5, September 3, and September 10; and Benlate (at a rate of eight ounces per acre) on July 22 and September 10.

Preplant fertilization at SMREC consisted of one application of 5-10-15 (at a rate of 1000 pounds per acre) on July 21. Sidedress fertilization consisted of an application of 193 pounds per acre of calcium nitrate on August 10. Insect control consisted of applications of

TABLE 3. PERFORMANCE OF SELECTED PUMPKIN VARIETIES IN ALABAMA

Variety	Marketable yield *lbs/a*	Marketable number *no/a*	Individual fruit weight *lbs*
Gulf Coast Research and Extension Center			
Rocket	30,735	3,474	8.8
Long Island Cheese	27,207	2,952	9.1
Gold Fever	20,610	2,106	9.9
Spirit	18,180	1,836	9.7
Hybrid Pam	18,018	4,194	4.3
HMX-4696	12,798	7,200	1.7
Appalachian	7,884	612	11.9
Valenciano	6,282	792	7.5
R^2	***0.86***	***0.94***	***0.83***
CV	***25***	***19***	***2.5***
lsd	***6,912***	***892***	***2.5***
Wiregrass Research and Extension Center			
Spirit	20,129	1,871	11
Big Autumn	19,060	1,784	11
EX-4622827	12,364	1,109	11
EXT-1854	11,984	3,241	4
EXT1853	11,468	3,023	4
EXT-4612297	8,761	1,697	6
RWS-6260-vp	7,256	3,763	2
SVR-4962333	7,210	479	13
Magic Lantern	6,576	653	10
Merlin	6,064	1,044	9
SVR-49662342	5,352	522	11
Wee-Be-Little	145	326	0.5
R^2	***0.66***	***0.67***	***0.74***
CV	***46***	***45***	***46***
lsd	***5,299***	***905***	***9***
North Alabama Horticulture Research Center			
SVR-4962333	35,070	2,826	12
SVR-4962342	23,659	2,880	9
Appalachian	23,114	2,448	9
Magic Lantern	22,406	2,196	10
Tom Fox	21,657	1,728	12
RWS 5668	20,428	1,602	13
Gold Strike	19,130	1,548	13
Gold Rush	18,787	1,404	14
Long Island Cheese	18,684	2,052	9
Merlin	17,106	2,394	7
Gold Fever	15,708	1,818	8
Tallman	12,636	1,116	11
R^2	***0.52***	***0.52***	***0.61***
CV	***28***	***28***	***17***
lsd	***8,200***	***695***	***1***

continued

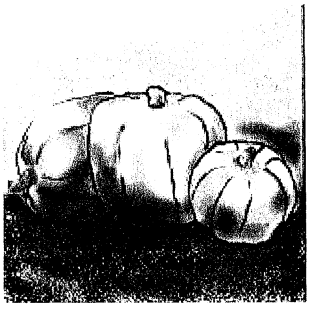
TABLE 3, CONTINUED. PERFORMANCE OF SELECTED PUMPKIN VARIETIES IN ALABAMA

Variety	Marketable yield *lbs/a*	Marketable number *no/a*	Individual fruit weight *lbs*
Sand Mountain Research and Extension Center			
Spirit	22,220	2,738	8
Trick-or-Treat	20,800	2,356	10
Racer	19,043	2,228	9
EX4622827	18,381	1,974	10
Appalachian	17,075	1,401	13
Jack-of-All-Trades	15,974	1,846	9
Hybird Pam	12,065	3,311	4
Spookie	10,709	2,929	4
Peek-A-Boo	10,008	3,756	3
Small Sugar	9,900	2,992	3
Jack- Be- Quick	9,716	10,250	1
Early Autumn	9,225	1,210	7
Lil' Goblin	7,952	9,614	1
Sugar Treat	4,877	1,210	5
Little Lantern	3,311	446	8
Baby Bear	1,942	1,210	2
Wee-Be-Little	1,184	2,610	0.6
R^2	***0.61***	***0.77***	***0.83***
CV	***60***	***61***	***38***
lsd	***4,032***	***1,108***	***4***

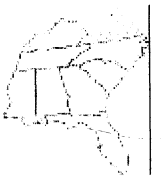
Asana (at a rate of eight ounces per acre) on August 19 and September 8, Sevin (at a rate of one quart per acre) on August 13, and Dipel (at a rate of one quart per acre) on August 13. Fungal diseases were controlled with applications of Benlate (at a rate of 0.5 pound per acre) on August 19, September 2, September 8, and September 25; and Bravo (at a rate of two pints per acre) on September 2 and September 8.

Harvest dates were September 28 at GCREC, November 3 at WREC, September 28 at NAHRC, and October 6 at SMREC. Because color development stops after harvest, pumpkins were harvested at the full-color stage and graded as marketable or nonmarketable (Table 3).

High night temperatures resulted in early maturity which resulted in small fruits. 'Spirit', for example, which is in the 15 to 25 pounds class weighed an average of 9.5 pounds. Experimental lines that have powdery mildew resistance performed well compared to the other varieties. At NAHRC, 'SVR 4962333' had significantly higher yields than standard, well-known varieties, some of which exhibit powdery mildew resistance. At SMREC, 'EX-4622827' ranked fourth though it out performed other varieties of comparable weight such as 'Appalachian' and 'Jack-Of-All-Trades'.



Pumpkin Variety Trial in Southeast Virginia



Bob Bevacqua

Pumpkin has excellent potential for increased production in southeast Virginia. The crop is grown for use as jack-o-lanterns during the Halloween season. In 1998, 90% of the 136 acres planted on seven farms was of the 'Howden' variety. It is the standard for the U.S. industry; however, it has a history of erratic and unsatisfactory production in southeast Virginia. This led to the present effort to identify varieties that could be grown in place of 'Howden'.

Nine pumpkin varieties were evaluated during the 1999 growing season on the farm of M.L. Everett in Southampton County, Virginia. The trial was laid out as a randomized block design with three replications.

'Magic Lantern' and 'Appalachian' were found to be the two most promising varieties (see table). Both have a dark orange color, a round, upright shape, a strong handle or stem, relative disease resistance, and were high yielding. The yields of both were 6.5 times the yield of 'Howden'. They were found to be profitable alternatives to 'Howden'.

In summary, the pumpkin varieties recommended for commercial production in southeast Virginia, based on the results of this trial, are 'Magic Lantern' and 'Appalachian'.

YIELD FOR NINE PUMPKIN VARIETIES EVALUATED FOR USE AS JACK-O-LANTERNS

Variety	Days to maturity	Fruit/ vine	Range fruit weight *lbs*	Avg fruit weight *lbs*	Yield *lbs/a*
Howden	73-87	0.27	13-15	13.5	2,942
Magic Lantern	73-80	2.00	5-18	11.9	19,267
HMX 6689	73-80	1.08	4-18	13.0	1,330
Gold Rush	80-87	0.58	12-22	18.0	8,425
Mother Lode	73-80	0.83	6-20	11.3	7,567
Pro Gold 500	73-80	1.08	5-24	11.7	10,197
Pro Gold 510	73-87	1.25	8-18	12.7	12,811
Appalachian	80-87	1.75	9-19	13.6	19,207
Tom Fox	73-87	0.97	8-13	10.3	8,063

'Quick Pic' Performs Best in Southernpea Nitrogen and Tillage Study

Kent Cushman and Thomas Horgan

A nitrogen and tillage study was conducted at the Horticulture Research and Education Unit in Verona, Mississippi.

Plots were four rows wide and 100 to 150 feet long. Yield was adjusted to account for differences in row length. Rows were spaced 30 inches apart. Only the center two rows were harvested for data.

The soil type was a Quitman silt loam. Preplant fertilizer was applied to all plots at the rate of 32 pounds per acre phosphorus (P_2O_5), and 90 pounds per acre potassium (K_2O). Nitrogen from ammonium nitrate was applied to the appropriate treatments at the rate of 30 pounds per acre.

Three cultivars of southernpea—'Quick Pick' (QP), 'Texas Pinkeye' (TxPE), and 'Mississippi Pinkeye' (MsPE)—were planted on June 5. The cultivars were planted into either raised or flat beds using either 30 pounds per acre ammonium nitrate without seed inoculation or no ammonium nitrate with *Rhizobium* seed inoculation. QP and TxPE were planted at 88,800 seeds per acre and MsPE was planted at 48,000 seeds per acre. All seed was certified at an 85% germination rate. Plots were not irrigated. Precipitation was 7.8 inches in June, 1.7 inches in July, and 0.43 inches in August.

The following herbicides were applied on June 5, Pursuit DG at 1.44 ounces per acre (0.062 pound imazethapyr per acre), Dual 8E at 1.5 pints per acre (1.5 pounds metolachlor per acre), Gramaxone Extra at three pints per acre (one pound paraquat per acre), and SurfAc surfactant. Additional herbicides applied were Poast at two pints per acre (0.375 pound sethoxydim per acre) with two pints per acre crop oil on June 19, and Basagran at two pints per acre (one pound bentazon salt per acre) also with two pints per acre crop oil on July 3. Pests were controlled with Asana XL at 9.6 fluid ounces per acre (0.05 pound esfenvalerate per acre) or Thiodan 3EC at two pounds per acre (1.5 pounds endosulfan per acre).

SOUTHERNPEA YIELD AND SHELLOUT

Treatment	Shelled pea yield *lbs./a*	Shellout *%*
Cultivar		
'Quick Pick'	**1208**[1]	49
'Texas Pinkeye'	962	51
'Mississippi Pinkeye'	981	**63**
Nitrogen source (N)		
NH_4NO_3	1067	54
Inoculum	1033	55
Bed architecture (B)		
Raised	**1123**	55
Flat	978	54

[1] Numbers in bold are significantly higher than other numbers within the same column, constituting a real difference among treatments. Some numbers within a column may be higher but statistically they are no different from the other numbers.

QP and TxPE were machine harvested on August 29 and August 30. MsPE was harvested once by hand on September 5 and September 6 due to dry conditions and less-than-ideal yields. After harvest, pods were left to dry slightly overnight before shelling. Yields were reduced due to drought conditions during pod fill. QP produced significantly greater yield than TxPE or MsPE.

The two nitrogen treatments, ammonium nitrate without seed inoculation or no ammonium nitrate with *Rhizobium* seed inoculation, were not significantly different. QP and TxPE were not affected by bed architecture, but MsPE on raised beds yielded significantly more than on flat beds. As with a similar study in 1998, MsPE had a significantly greater shellout than QP or TxPE. There were no significant interactions for yield or shellout.

Southernpea Cooperative Trials in North Mississippi

Kent Cushman and Thomas Horgan

Advanced selections of pinkeye, blackeye, cream, and snap southernpeas produced in southern plant-breeding programs were compared to standard, named cultivars of each type. Some of the selections were planted in a replicated trial while others were planted in an observational trial.

Plots were seeded on June 4 with a small garden planter. Irrigation was not applied at any time during the trial. Precipitation was 7.8 inches in June, 1.7 inches in July, and a mere 0.43 inches in August. The soil type was a Quitman silt-loam. Plots were disced and preplant fertilizer was broadcast at the rate of 30 pounds per acre of nitrogen (N), 32 pounds per acre of phosphorus (P_2O_5), and 90 pounds per acre of potassium (K_2O). Beds were then established and spaced 30 inches apart.

The following herbicides were applied on June 5: Pursuit DG at 1.44 ounces per acre (0.062 pound imazethapyr per acre), Dual 8E at 1.5 pints per acre (1.5 pounds metolachlor per acre), Gramaxone Extra at three pints per acre (one pound paraquat per acre), and SurfAc surfactant. Additional herbicides were applied later: Poast at two pints per acre (0.375 pound sethoxydim per acre) with two pints per acre crop oil on June 19, and Basagran at two pints per acre (one pound bentazon salt per acre) with two pints per acre crop oil on July 3.

Insect pests were controlled with Asana XL at 9.6 fluid ounces per acre (0.05 pound esfenvalerate per acre) or Thiodan 3EC at two pounds per acre (1.5 pounds endosulfan per acre).

Plots were 10 feet long with no space or guard plants between plots. Pods were allowed to dry before harvesting by hand on August 20. Peas were shelled with a small commercial sheller. Yield of green-mature, shelled peas was estimated by imbibing a known weight of dry seeds from each entry and replication.

Table 1. Southernpea Cooperative Replicated Trial

Variety	Pea type	Pea yield, imbibed *lbs/a*	Significance[1] (*P*=0.05)
ARK Blackeye #1	Blackeye	3,710	a
ARK-87-435-68	Pinkeye	3,360	a
Coronet	Pinkeye	2,701	b
ARK-574	Blackeye	2,430	bc
ARK-552	Pinkeye	2,340	bcd
US-905	Snap	2,310	bcd
TX-38	Pinkeye $_{gc/gc}$	2,290	bcd
TX-60	Pinkeye $_{gc/gc}$	2,190	cde
Early Acre	Cream	2,160	cde
ARK-551	Pinkeye	2,030	cdef
ARK-95-104	Cream	1,950	defg
US-880	Cream $_{gc/gc\ gt/gt}$	1,770	efg
US-881	Cream $_{gc/gc\ gt/gt}$	1,620	fg
US-910	Cream $_{gc/gc}$	1,500	g

[1] Values sharing at least one letter in common are not significantly different.

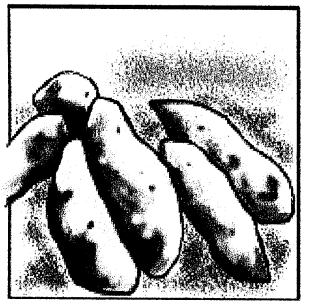
Only one of the pinkeye entries in the replicated trial, 'Ark-87-435-68', yielded significantly more than the standard cultivar 'Coronet' (Table 1). None of the other entries yielded significantly more than their respective standards; however, some of the entries yielded as well as the standards and were well suited to mechanical harvest. Several pinkeye and cream entries in the ob-

servational trial yielded as well as, or better, than their respective standards and these entries may be advanced to the replicated trial in the 2000 growing season (Table 2).

Entries labeled with a "gc/gc" subscript, such as pinkeye$_{gc/gc}$, have a unique genetic characteristic called "green cotyledon." Peas with this characteristic have a light green color when dry instead of the more common straw-colored appearance. Entries labeled with a "gt/gt" subscript have a unique genetic characteristic called "green testa." Peas with this characteristic have a green-colored seed coat while the underlying seed may be either straw or green colored. Some entries have both characteristics: a green-colored seed and a green-colored seed coat.

TABLE 2. SOUTHERNPEA COOPERATIVE OBSERVATIONAL TRIAL

Variety	Pea type	Pea yield, imbibed *lbs/a*
LA-96-21	Pinkeye	3,620
LA-95-98	Pinkeye	3,360
LA-94-97	Pinkeye	3,230
LA-96-98	Cream	3,230
LA-95-64	Cream	3,020
ARK-95-195	Pinkeye	2,960
Coronet	Pinkeye	2,700
US-904	Snap	2,470
TX-76	Pinkeye$_{gc/gc}$	2,240
TX-49	Pinkeye$_{gc/gc}$	2,210
Early Acre	Cream	2,210
US-903	Snap	2,170
ARK-95-105	Cream	1,680
ARK-96-918	Cream	1,630
US-909	Snap	1,500
US-908	Snap	1,160



Results of 1999 National Sweetpotato Collaborator's Trials

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

National sweetpotato collaborator's trials were conducted at the E.V. Smith Research Center (EVSRC) in Shorter, Alabama, and the North Alabama Horticulture Research Center (NAHRC) in Cullman, Alabama (Table 1).

Sweetpotato seed roots from selected commercial varieties and breeding lines were planted in a heated bed at NAHRC on March 17 for slip production. At both locations, plots contained two rows that were 30 feet long and 3.5 feet wide. Within row spacing was one foot. Slips were planted on June 15 at EVSRC and NAHRC.

At EVSRC, calcium nitrate (15.5-0-0 at a rate of 255 pounds per acre), muriate of potash (0-0-60 at a rate of 133 pounds per acre) and Triple Superphosphate (0-46-0 at a rate of 173 pounds per acre) were broadcast applied on June 14. A sidedress of ammonium of nitrate (176 pounds per acre) was applied on July 21. Weeds were controlled with an application of Dacthal 75W (nine pounds per acre) and Poast 1.5E (1.5 pints per acre) on June 21 and September 7, respectively.

Table 1. Ratings of the 1999 Sweetpotato Variety Trials[1]

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

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

At NAHRC, ammonium nitrate (34-0-0 at a rate of 80 pounds of nitrogen per acre) was broadcast applied on June 14. Weed control was provided by an application of Command (at a rate of three pints per acre) on June 15. Weed control was provided by an application of Command (at a rate of three pints per acre) on June 15. Overhead irrigation was used once a week from June 22 through August 31 and also on September 7 and 15.

Sweetpotatoes were harvested on October 22 at EVSRC and on October 19 at NAHRC (Table 2). Roots were graded as US#1 (roots two 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

Table 2. Total Production and Grade Distribution of 1999 Sweetpotato Selections

Variety	US#1[1] *bu/a*[2]	Canner[3] *bu/a*	Jumbo[4] *bu/a*	Cull[5] *bu/a*	Total marketable[6] *bu/a*	Percent US#1[7] *%*
			E.V. Smith Research Center			
L94-96	692a	199b	126a	121b	1017a	68a[8]
Beauregard	488b	245ab	85ab	154b	817ab	59b
W337	384b	190b	120a	338a	694b	55bc
NC 93-17	376b	355a	35b	159b	766ab	50c
R^2	***0.61***	***0.51***	***0.44***	***0.73***	***0.40***	***0.70[9]***
CV	***24***	***30***	***52***	***31***	***21***	***8***

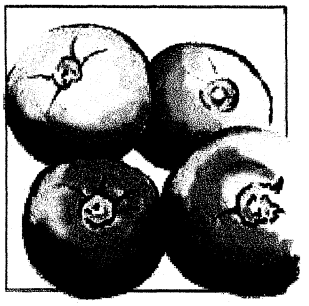
continued

weight requirements of the US#1 grade, but that are of marketable quality), or cull (roots a least one inch in diameter but so misshapen of 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, CONTINUED. TOTAL PRODUCTION AND GRADE DISTRIBUTION OF 1999 SWEETPOTATO SELECTIONS

Variety	US#1[1] *bu/a*[2]	Canner[3] *bu/a*	Jumbo[4] *bu/a*	Cull[5] *bu/a*	Total marketable[6] *bu/a*	Percent US#1[7] *%*
North Alabama Horticulture Research Center						
Beauregard	669a	207a	26ab	120a	902a	73
NC 93-17	468a	238a	8b	144a	714a	64
L 94-96	454a	192a	61a	172a	708a	64
W-377	451a	199a	2b	86a	652a	69
W-334	118b	72b	0b	136a	190a	59
W-352	52b	87b	0b	23a	140b	34
R²	***0.70***	***0.60***	***0.40***	***0.24***	***0.74***	***0.71***
CV	***42***	***32***	***197***	***86***	***95***	***15***

[1] US#1 - Roots 2" to 3 ½" diameter, 3" to 9" in length, well shaped and free of defects.
[2] 40-pound bushels.
[3] Canners - Roots 1" to 2" diameter, 2" to 7" in length.
[4] Jumbo or oversized - Roots that exceed the diameter, length, and weight requirements of the above two grades, but are of marketable quality.
[5] Cull - Roots 1" or larger in diameter and so misshapen or unattractive that they could not fit as marketable roots in any of the above three grades.
[6] Marketable defined as the sum of US #1, canner and Jumbo grades.
[7] Percent US#1 - Calculated by dividing the weight of US#1 by the total marketable weight (Culls not included)
[8] Numbers followed by different letters are significantly different according to Duncan's Multiple Range Test.
[9] Means followed by different letters are significantly different according to Duncan's Multiple Range Test.



Fall Tomatoes in South Alabama

Edgar Vinson, Eric Simonne, and Randy Akridge

A tomato variety trial was conducted at the Brewton Research Field in Brewton, Alabama (Tables 1 and 2). Seven-week-old tomato transplants were established on August 22 onto 20-foot-long plots, at a within-row spacing of 1.5 feet. Tomatoes were grown on silver, reflective plastic mulch and drip irrigation following a spring squash crop.

Preplant fertilizer consisted of an injection of 60 pounds of nitrogen per acre. After planting, fertilization consisted of weekly injections of either calcium nitrate (at a rate of 10 pounds of nitrogen per acre) or potassium nitrate (at a rate of 20 pounds of nitrogen per acre) between August 22 and November 10.

Fungicides used were Terraclor 75WP at a rate of three pounds per 100 gallons of water (each plant received 0.5 pint of the mixture on October 4 and 25); Benlate 50WP (at a rate of one pound per acre) on September 20 and October 3; and, Bravo 720 (at a rate of two pints per acre) on September 20, October 3, October 17, and October 31.

Due to cool fall temperatures, tomatoes were harvested only once. Tomatoes were harvested, weighed, and graded on November 10 (Table 3). Grades and corresponding fruit diameters (D) of fresh market tomato were adapted from the *Tomato Grader's Guide* (Circular ANR 643 from the Alabama Cooperative Extension System) and were Jumbo (D > 3.5 inch), Extra-Large (D >2.9 inch), Large (D >2.5 inch) and Medium (D >2.3 inch). Marketable yield was calculated by combining the Jumbo, Extra-Large, and Large grades (Table 3).

Cool temperatures in October delayed color development of the tomatoes. 'Carolina Gold', a yellow variety, began ripening earlier than the other varieties though its total yield was surpassed by many other varieties. 'Voyager' ranked the highest, out performing varieties such as 'Agriset 761' and 'Florida 47'.

Table 1. Ratings of 1998 Southern Pea Variety Trial[1]

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

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

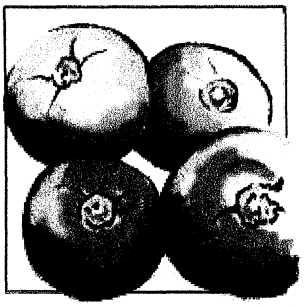
Table 2. Seed Source, Fruit Characteristics, and Relative Earliness of Selected Tomato Varieties

Variety	Type[1]	Seed source	Plant habit[2]	Fruit color	Days to harvest	Disease claims[3]	Years evaluated
Agriset 761	F1 FM	Agrisales/UF1	Det	Red	—	—	97-99
Carolina Gold	F1 FM	Novartis/N.C.State	Det	Yellow	75	FW,VW	99
Florida 47	F1 FM	Asgrow	Det	Red	75	ASC,FW,St,VW	97,98
Red Sun	F1 FM	Johnny's	Det	Red	72	FW, NE, TbMV, VW	99
RFT-6116	F1 FM	Novartis	Det	Red	—	—	98,99
Sunbelt	F1 FM	Petoseed	Det	Red	72	ASC,FW,NE,St,VW	96,97
Ultra Magnum	F1 FM	Stokes	Det	Red	68	FW,TbMV,VW	94-98
Voyager	F1 FM	Johnny's	Det	Red	78	FW,VM	99
XP-10089	F1 FM	Asgrow	Det	Red	—	—	99

[1] Type: F1 = Hybrid; OP = Open pollinated. FM = Fresh Market. [2] Plant habit: Det = Determinate.
[3] Disease claims: FW = Fusarium Wilt; VW = Verticillium Wilt; ASC = Alternaria Stem Canker; St = Stemphylium (gray leaf spot); NE = Root-knot Nematodes; TbMV = Tobacco Mosaic Virus. — = not available; from seed catalogs.

TABLE 3. FALL PERFORMANCE OF SELECTED TOMATO VARIETIES AT THE BREWTON EXPERIMENT FIELD, BREWTON, ALABAMA

Variety	Stand *%*	Market-able weight *lbs./a*	Jumbo weight *lbs./a*	Jumbo number *no/a*	X-large weight *lbs/a*	X-large number *no/a*	Large weight *lbs/a*	Large number *no/a*	Medium weight *lbs/a*	Medium number *no/a*	Cull *lbs/a*	Individual fruit weight *lbs*
Voyager	100	14,208	1,267	1,414	7,025	14,355	4,084	10,331	1,735	5,981	2,599	0.55
Agriset 761	100	13,425	321	326	6,693	14,899	4,665	11,854	1,767	6,199	3,969	0.57
Red Sun	90	12,898	1,930	2,175	6,866	13,811	2,311	5,873	1,104	3,915	5,051	0.55
Sunbelt	100	12,800	1,909	2,175	6,292	13,485	2,958	7,721	1,691	5,981	3,997	0.53
Ultra Magnum	100	12,615	1,729	1,849	6,206	13,268	3,061	7,939	1,202	4,241	7,074	0.54
XP 10089	100	11,560	674	761	6,232	13,159	3,029	8,809	2,077	7,613	2,409	0.52
RFT 6116	100	10,511	413	435	5,580	11,745	3,061	7,830	1,566	5,438	2,137	0.56
Carolina Gold	90	9,032	359	435	4,765	10,114	2,664	6,960	1,794	6,525	3,627	0.53
Florida 47	80	8,483	620	653	4,011	8,591	2,806	7,178	1,561	5,438	1,577	0.55
R2		***0.20***			***0.34***							
CV		***36***			***101***							
lsd		***6,090***			***1,479***							



Variety Evaluation of Spring Greenhouse Tomatoes in South Mississippi

Richard G. Snyder, Jim Curtis, and Larry Harkins

In the spring of 1998, a trial of six hybrid, indeterminate greenhouse tomato varieties was performed at the Truck Crops Branch Experiment Station in Crystal Springs, Mississippi.

Tomato varieties were seeded on December 8, 1997, and seedlings were transplanted on January 13, 1998 into two-cubic-foot, pine-bark-filled polyethylene bags. There were four plants per bag, and 16 plants per plot with four replications. The experimental design was a randomized complete block. Data collected included marketable number, marketable weights, cull number, and cull weight (Table 1). In addition, culls were separated into a large number of physiological disorder categories to determine possible quality problems with some of the new varieties and breeding lines (Table 2a and 2b). Data were analyzed by analysis of variance, with mean separation by Duncan's New Multiple Range Test.

Of the varieties and lines included, both 'Grace' and 'DRW5007' have strong tolerance to powdery mildew, which has become a serious disease problem in some Mississippi greenhouses in the past two years. Either of these new varieties would be of great value, providing that the yield and quality are comparable to current varieties being grown.

'DRW5018' had significantly higher marketable number and weight of fruit than the other varieties in this evaluation (Table 1). 'Grace' had significantly lower weights and numbers. The other varieties were intermediate in values.

Cull numbers and weights were highest with 'Grace', closely followed by 'Blitz'. 'DRW5018' had the lowest cull weights and numbers (Table 2a). Fruit size and physiological disorders, by number, were separated into 17 categories. There were no significant differences in jumbo culls, small fruit, striped fruit, catfacing, or irregular ripening among the varieties in this evaluation. 'DRW5018' had the most fruit with rough shape, closely followed by 'Blitz'. 'DRW5007' and 'Grace' had the lowest number of rough fruit. 'Grace' and 'DRW5007' had the highest number of fruit with poor skin quality. 'DRW5018', 'Blitz', and 'DRW5016' had the least. Radial cracking was significantly higher in 'Grace' and 'DRW5007' than the other varieties. 'DRW5016' had the least radial cracking. Concentric cracking, however, was worst in 'Blitz' fruit, closely followed by 'DRW5007' and 'Trust'. The other varieties had significantly less concentric cracking,with 'DRW5018' numerically the lowest. Russetting was highest in both 'Grace' and 'DRW 5007'. 'DRW5018' had the least russetted fruit. Zipper scar (anther scar) was significantly higher in 'Blitz' than any other variety in this evaluation. Split skins were higher in 'Trust', 'Grace', 'Blitz', and 'DRW5007' than in the other new breeding lines.

Table 1. Yield and Quality of Fruit From A Spring 1998 Greenhouse Tomato Variety Trial at the Truck Crops Experiment Station in Crystal Springs, Mississippi

Variety	Marketable number[1]	Marketable weight *lbs*	Cull number	Cull weight *lbs*
Trust	247 b	115 b	376 abc	133 bc
Blitz (3558)	223 b	103 b	422 ab	146 ab
Grace (4409)	168 c	79 c	441 a	155 a
DRW5007 (Style)	218 b	104 b	364 bc	133 bc
DRW5016	248 b	113 b	358 bc	121 c
DRW5018 (Quest)	302 a	138 a	303 c	95 d
Signigicance[2]	**	**	**	**

[1] Yields are based on 16-plant plots. [2] Numbers followed by different letters are significantly different according to Duncan's New Multiple Range Test; ** indicates significant at p< or =0.01; * indicates p < or =0.05; ns indicates not significant at p=0.05.

Green shoulder was more of a problem with 'Grace' than any other variety (Table 2b). 'Blitz' had more puffy fruit than any other variety. 'DRW5007' had the least puffy fruit. Blossom end rot was worst in 'DRW5016', followed by 'DRW5007'. 'Trust' was very low in blossom end rot. 'Trust' had significantly more soft fruit than any other variety tried.

At the end of the growing season, remaining green fruit were removed and counted. 'Grace' had the most green fruit on this date, closely followed by 'DRW5018' and 'Blitz'.

In conclusion, the new variety 'Grace' did not perform as well as anticipated in this trial. In spite of its powdery mildew tolerance, it had low numbers and weights of marketable fruit yet high numbers and weights of cull fruit. In particular 'Grace' suffered from poor skin quality, radial cracking, russetting, split skins, and green shoulder. In addition, there were a larger number of unripe fruit at the end of the season, suggesting that it is slower in ripening.

Looking at yield alone, 'DRW5018' performed the best. It also had the lowest total cull weights and numbers. It did, however, have some problems with rough fruit and green fruit remaining at the end of the season. This line should be evaluated further and considered for future commercial production.

'Trust', the leading variety in North America at this writing, performed satisfactorily, yet had some problems with skin splits and soft fruit.

TABLE 2A. SIZE AND PHYSIOLOGICAL DISORDERS OF FRUIT FROM A SPRING 1998 GREENHOUSE TOMATO VARIETY TRIAL AT THE TRUCK CROPS BRANCH EXPERIMENT STATION IN CLEAR SPRINGS, MISSISSIPPI[1]

Variety	Jumbo culls *no*	Small *no*	Rough shape *no*	Poor skin *no*	Radial cracks *no*	Concentric cracks *no*	Russetted skin *no*	Zipper scar *no*	Split skin *no*
Trust	6	215	18 bc	34 bc	62 ab	17 ab	112 b	3 b	28 a
Blitz (3558)	2	245	26 ab	32 bcd	63 ab	20 a	107 b	8 a	24 a
Grace (4409)	9	245	10 cd	49 a	92 a	9 bc	192 a	3 b	26 a
DRW5007 (Style)	3	188	6 d	42 ab	81 a	18 ab	160 a	4 b	20 a
DRW5016	1	229	19 bc	31 cd	24 c	8 c	115 b	1 b	4 b
DRW5018 (Quest)	2	197	30 a	22 d	39 bc	2 c	36 c	3 b	4 a
Significance [2]	***ns***	***ns***	**	**	**	**	**	**	**

[1] Yields are based on 16-plant plots.

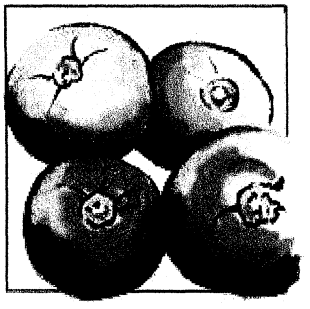
[2] Numbers followed by different letters are significantly different according to Duncan's New Multiple Range Test; ** indicates significant at p< or =0.01; * indicates p< or =0.05; ns indicates not significant at p=0.05.

TABLE 2B. SIZE AND PHYSIOLOGICAL DISORDERS OF FRUIT FROM A SPRING 1998 GREENHOUSE TOMATO VARIETY TRIAL AT THE TRUCK CROPS BRANCH EXPERIMENT STATION IN CLEAR SPRINGS, MISSISSIPPI[1]

Variety	Green shoulder *no*	Striped fruit *no*	Cat face *no*	Irregular ripening *no*	Puffy *no*	Blossom end rot *no*	Soft *no*	Green *no*
Trust	58 bc	1	1	11	94 b	1 b	8 a	7 bc
Blitz (3558)	55 bc	1	5	7	138 a	1 b	1 b	19 ab
Grace (4409)	115 a	1	4	10	102 b	4 b	2 b	24 a
DRW5007 (Style)	78 b	0	1	6	66 c	6 ab	1 b	9 bc
DRW5016	43 bc	2	3	10	104 b	13 a	1 b	5 c
DRW5018 (Quest)	27 c	1	1	8	109 b	3 b	2 b	20 ab
Significance [2]	**	***ns***	***ns***	***ns***	**	*	**	*

[1] Yields are based on 16-plant plots.

[2] Numbers followed by different letters are significantly different according to Duncan's New Multiple Range Test; ** indicates significant at p< or =0.01; * indicates p< or =0.05; ns indicates not significant at p=0.05.



Variety Evaluation of Fall Greenhouse Tomatoes in South Mississippi

Richard G. Snyder, Jim Curtis, and Larry Hawkins

A trial of 12 hybrid indeterminate greenhouse tomato varieties was performed at the Truck Crops Branch Experiment Station in Crystal Springs, Mississippi, in the fall of 1998.

Seeds were planted on July 20, 1998, and seedlings were transplanted on August 24 into two-cubic-foot, pine-bark-filled, white-on-black laminated polyethylene bags. Of the varieties and lines included, both 'Grace' and 'DRW5007' have strong tolerance to powdery mildew. Although powdery mildew has become a serious disease problem in some Mississippi greenhouses in the past two years, it was not a problem on any variety in this fall trial. There were four plants per bag, and 16 plants per plot, with four replications. The experimental design was a randomized complete block, with two blocks in each greenhouse (divided north vs. south).

Data collected included marketable number, marketable weight, cull number, and cull weight (Table 1). In addition, culls were graded severely and separated into a large number of physiological disorder categories to determine possible quality problems with some of the new varieties and breeding lines. Data were analyzed by analysis of variance, with mean separation by Duncan's New Multiple Range Test.

'Attention' had the highest marketable number of fruit, closely followed by 'Switch'. 'Baronie' (7452RZ) and 'DRW5007' had the lowest marketable numbers. There were no significant differences in marketable weights, although the trend was for 'Attention' and 'Switch' to have the highest weights.

Fruit were graded severely into a large number of physiological disorders. In general, this fall crop had serious problems with undersized fruit and russetting. All of these disorders are totaled in the category labeled "culls". 'Estancia' and 'Girondo' had the highest total cull numbers. There were no significant differences in cull weights, although 'MS-RZ' and 'Estancia' were at the top of the list. 'DRW5007' and 'Baronie' (7452RZ) were lowest in cull numbers, while no varieties were remarkably lower in total cull weights.

Among the individual disorders, there were a number of significant separations. All values are in number of fruit

Table 1. Yield and Quality of Fruit From a Fall 1998 Greenhouse Tomato Variety Trial at the Truck Crops Branch Experiment Station in Crystal Springs, Mississippi

Variety	Marketable number[1]	Marketable weight *lbs*	Cull number	Cull weight *lbs*
Grace (4409)	52 bc	24	252 cd	80
MS-RZ	50 bc	23	255 bcd	91
Attention	74 a	31	288 ab	84
Zoltano	50 bc	23	251 cd	81
Estancia	63 abc	26	304 a	87
DRW 5007	46 c	21	228 d	77
Switch	71 ab	27	262 bcd	81
7452-RZ	43 c	19	234 d	82
Trust	55 abc	23	251 cd	78
Gironda	64 abc	25	298 a	83
Blitz (3558)	56 abc	24	258 bcd	82
Glo	54 abc	22	284 abc	85
Significance[2]	*	*ns*	**	*ns*

[1] Yields are based on 16-plant plots. [2] Numbers followed by different letters are significantly different according to Duncan's New Multiple Range Test; ** indicates significant at p< or =0.01; * indicates p< or =0.05; ns indicates not significant at p=0.05.

per plot. 'MS-RZ' had the most jumbo culls. 'Estancia' and 'Gironda' had the most small fruit. 'Zoltano' was notably high in rough fruit. All of the varieties suffered somewhat from small fruit, rough fruit, and russetting in this crop. 'MS-RZ' was clearly the poorest variety for radial cracking, while 'Gironda', 'Trust', and 'Blitz' had the most concentric cracking problem.

While all varieties had a serious russetting problem in this crop, russetting was a problem more in 'Gironda' than the other varieties. 'Zoltano' had the least russetting. Zipper scar (anther scar) was more of a problem in 'Zoltano', 'Estancia', and 'Glo' than the other varieties, while 'DRW5007' had the least problem with this defect. 'Estancia' and 'Switch' had the highest numbers of split skins. There were no significant differences in skin quality, catfacing, blossom-end rot, or green fruit number at the end of the crop.

In conclusion, 'Attention' and 'Switch' appeared to be the highest yielding varieties in this trial. However, 'Attention' was also among those with the highest cull number, along with 'Estancia' and 'Girondo'. Among the best varieties for quality were 'DRW5007' and 'Baronie' (7452RZ) while 'Zoltano' and 'Estancia' had quality problems in more areas than the other varieties.

Details on how individual varieties performed in regards to physiological disorders can be seen in Tables 2a and 2b.

TABLE 2A. SIZE AND PHYSIOLOGICAL DISORDERS OF FRUIT FROM A FALL 1998 GREENHOUSE TOMATO VARIETY TRIAL AT THE TRUCK CROPS BRANCH EXPERIMENT STATION IN CLEAR SPRINGS, MISSISSIPPI[1]

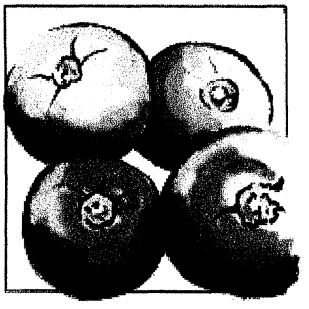
Variety	Jumbo culls *no*	Small *no*	Rough shape *no*	Poor skin *no*	Radial cracks *no*	Concentric cracks *no*	Russetted skin *no*	Zipper scar *no*	Split skin *no*
Grace (4409)	2 bc	153 cde	59 bcde	16.5	21.2 b	3 cd	95 d	18 ab	8 bcde
MS-RZ	6 a	137 de	78 bcd	18.2	34.5 a	3 cd	115 abcd	12 bc	12 abc
Attention	2 bc	198 ab	85 b	10.0	20.5 b	6 abc	118 abcd	14 abc	6 bcde
Zoltano	2 bc	147 cde	137 a	12	14 b	1 d	69 e	20 a	5 cde
Estancia	1 bc	212 a	37 e	17	16 b	5 bcd	126 ab	20 a	17a
DRW 5007	3 abc	127 de	39 e	11	21 b	6 abc	112 abcd	10 c	10 abcde
Switch	5 bc	170 bc	59 bcde	12	16 b	5 bcd	99 bcd	14 abc	17 a
7452-RZ	4 ab	126 e	82 bc	14	13 b	3 cd	99 cd	15 abc	4 de
Trust	1 bc	159 cd	49 de	14	15 b	9 ab	108 abcd	12 bc	13 ab
Gironda	0.8 c	220 a	53 cde	13	20 b	10 a	131 a	12 bc	12 abc
Blitz (3558)	1 c	159 cd	50 de	11	17 b	9 ab	111 abcd	17 abc	10 abcd
Glo	1 c	17 bc	83 b	13	21 b	3 cd	123 abc	20 a	2 e
Significance [2]	**	**	**	*ns*	*	**	**	*	**

[1] Yields are based on 16-plant plots. [2] Numbers followed by different letters are significantly different according to Duncan's New Multiple Range Test; ** indicates significant at p< or =0.01; * indicates p< or =0.05; ns indicates not significant at p=0.05.

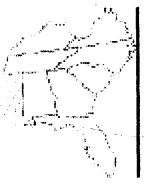
TABLE 2B. SIZE AND PHYSIOLOGICAL DISORDERS OF FRUIT FROM A FALL 1998 GREENHOUSE TOMATO VARIETY TRIAL AT THE TRUCK CROPS BRANCH EXPERIMENT STATION IN CLEAR SPRINGS, MISSISSIPPI[1]

Variety	Green shoulder *no*	Cat face *no*	Irregular ripening *no*	Puffy *no*	Blossom end rot *no*	Soft *no*	Green *no*
Grace (4409)	71.2 a	3	2 b	1 b	0	0 c	17
MS-RZ	60 ab	6	7 ab	1 b	1	1 bc	18
Attention	38 cd	3	1 b	1 ab	0	0 c	12
Zoltano	64 ab	6	15 a	2 a	2	1 c	16
Estancia	43 bcd	6	0 b	1 b	0	4 a	13
DRW 5007	62 ab	3	1 b	1 b	2	0 c	11
Switch	23 d	5	0 b	1 b	1	4 ab	12
7452-RZ	60 ab	5	3 b	0 b	0	1 c	26
Trust	220 d	4	0 b	0 b	0	2 abc	24
Gironda	32 cd	3	1 b	0 b	1	1 c	17
Blitz (3558)	52 abc	7	2 b	0 b	1	1 c	25
Glo	30 d	5	1 b	1 b	1	0 c	13
Significance [2]	**	*ns*	*	*	*ns*	*	*ns*

[1] Yields are based on 16-plant plots. [2] Numbers followed by different letters are significantly different according to Duncan's New Multiple Range Test; ** indicates significant at p< or =0.01; * indicates p< or =0.05; ns indicates not significant at p=0.05.



Mississippi Medallion Field Tomato Trial, Fall 1999



Richard G. Snyder and Peter Hudson

In the fall of 1999, a tomato variety trial was conducted at the Truck Crops Branch in Crystal Springs, Mississippi. This trial represented the first introduction of vegetables in the Mississippi Medallion program, which informs the gardening public of plants and shrubs that perform well and are easy to care for in the Mississippi climate.

Six varieties of tomato plants were obtained from Willie Rivers Plant Farm in Brandon, Mississippi. At the same time, this trial was conducted at five other locations in Mississippi. Varieties, selected by the Mississippi Medallion Vegetable Subcommittee, included 'Betterboy', 'Celebrity', 'Heatwave', 'Merced', 'Sunmaster', and 'Mountain Spring'.

Plants were transplanted to the field on July 30 and arranged in a randomized complete block design with four replications. Plants were spaced two feet apart in the row, with six plants per plot. This was a fairly rigorous test, since in late summer the temperatures were very high. This is the cause for the large number of culls, especially small fruit. Data collected included marketable number, marketable weight, small number, small weight, cull number, and cull weight. Fruit size was calculated but not analyzed. Data were analyzed by analysis of variance, with mean separation by Duncan's New Multiple Range Test.

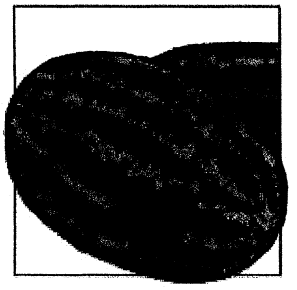
'Sunmaster' had the highest total numbers and weights of fruit (see table). However, both 'Heatwave' and 'Sunmaster' had the highest marketable weights and numbers of fruit. This is because 'Sunmaster' was also highest in small fruit and other cull fruit, both in weights and numbers. Lowest yielding varieties in this trial were 'Celebrity' and 'Better Boy', both in weights and numbers of marketable and total fruit harvested. 'Sunmaster' had more small fruit than any other variety. 'Heatwave' was intermediate in the numbers and weights of small fruit, with the remaining four varieties low in small fruit production. As for other culls, 'Sunmaster' had the most, followed by 'Heatwave' and 'Mountain Spring'.

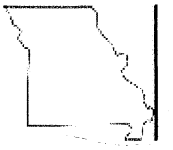
In summary, both 'Sunmaster' and 'Heatwave' were the best yielding varieties. Even after the relatively large number of culls was accounted for, the marketable yield of these two varieties was the best. Of these two varieties, 'Sunmaster' had the larger average fruit size (8.3 ounces); 'Heatwave' was relatively small (7.6 ounces), although the size data were not analyzed.

Yield and Quality of Tomatoes In A Fall 1999 Field Trial at the Truck Crops Branch Experiment Station in Crystal Springs, Mississippi

Variety	Marketable number[1]	Marketable weight *lbs*	Total number	Total weight *lbs*	Small number	Small weight *lbs*	Other cull number	Other cull weight *lbs*	Fruit size *oz*
Better Boy	4 c	2 c	17 d	6 d	9 c	3 c	4 b	2 b	8.0
Celebrity	5 c	3 c	24 d	9 d	14 c	4 c	5 b	2 b	8.4
Heatwave	26 a	12 a	70 b	24 b	33 b	8 b	9 ab	4 b	7.6
Merced	14 b	7 b	41 c	15 c	22 bc	6 bc	5 b	2 b	7.8
Sunmaster	26 a	14 a	94 a	33 a	53 a	12 a	16 a	7 a	8.3
Mountain Spring	14 b	7 b	44 c	17 c	21 c	6 bc	9 ab	5 ab	8.2
Significance[2]	**	**	**	**	**	**	*	*	***not analyzed***

[1] Yields are based on 6-plant plots. [2] Numbers followed by different letters are significantly different according to Duncan's New Multiple Range Test; ** indicates significant at p< or =0.01; * indicates p< or =0.05; ns indicates not significant at p=0.05.





Watermelon Cultivars for the Missouri Bootheel

Lewis W. Jett

The Missouri bootheel produces approximately 6,000 acres of watermelons each year, making Missouri among the top ten watermelon-producing states in the United States. The soils within this area are coarse textured (sand to sandy loam), fertile, and well suited for vegetable production. There is a trend towards increased demand for seedless (triploid) watermelons in the United States. The objective of this research was to investigate several seeded and seedless watermelon cultivars for commercial production in the Missouri bootheel.

Twenty watermelon cultivars were evaluated in 1999 at the University of Missouri Delta Research Center at Portageville, Missouri. The site chosen was a satellite farm of the research station located in Clarkton, Missouri. The soil type was a sandy loam with a pH of 6.0. The varieties were seeded in 72-cell plastic trays and hand-transplanted into the field plots approximately seven weeks later on June 3 and 4.

Prior to transplanting, the field was fertilized with 80 pounds of nitrogen, 100 pounds of phosphate, and 100 pounds of potassium per acre. Each cultivar was planted 48 inches between plants and nine feet between rows on black plastic mulch. Four bee colonies were placed in the field to ensure adequate pollination. Drip irrigation was used to deliver approximately one inch of water per week, and standard cultural practices were followed through harvest.

Each plot was harvested beginning on August 17. Variables measured included fresh weight, length, diameter, color, and rind thickness.

Seeded (Diploid) Varieties. 'Royal Sweet' yielded the greatest quantity of marketable fruit per acre relative to the other seeded varieties (see table). However, 'Starbrite', 'Stars and Stripes', 'Legacy', and 'Summer Flavor (SF) 500' had high yields. 'Summer Flavor 500' had excellent flesh color relative to 'Royal Sweet' and requires further evaluation.

Seedless (Triploid) Varieties. 'Ace of Hearts', 'Boston', 'Triple Crown', 'Nova', '4502', and 'Summer Sweet 5544' had high yields of quality melons (see table). 'Triple Crown' had the highest quantity of fruit harvested per acre. 'Freedom', '4502', and 'SS 5544' had excellent flesh color.

MARKETABLE YIELD AND QUALITY CHARACTERISTICS OF SEEDED AND SEEDLESS WATERMELON VARIEITES

Variety	Seed source	Marketable yield[1]		Fruit	Color[2]	Rind thickness	Length	Diameter
		cwt/a	*ton/a*	*no/a*		*in*	*in*	*in*
Seeded (diploid):								
Legacy	Willhite	362	18.1	1549	3.7	0.80	17	31
Patriot	Willhite	309	15.5	1646	4.7	0.75	14	28
Regency	SI	177	8.9	823	4.0	0.80	14	27
Revolution	Sun Seeds	156	7.8	823	4.9	0.50	15	27
Royal Sweet	Peto Seed	418	21.0	1742	4.0	0.80	16	30
Sangria	Abbott and Cobb	128	6.4	1113	4.4	0.50	17	25
SF500	Abbott and Cobb	321	16.0	1258	5.0	0.80	19	28
SF510	Abbott and Cobb	205	10.2	871	5.0	0.70	16	30
SF900	Abbott and Cobb	198	9.9	968	4.4	0.50	16	25
Stars Stripes	Asgrow	364	18.2	1549	4.4	0.60	17	26
Starbrite	Asgrow	372	18.6	1404	4.5	1.00	16	31

continued

CONTINUED, MARKETABLE YIELD AND QUALITY CHARACTERISTICS OF SEEDED AND SEEDLESS WATERMELON VARIEITES

Variety	Seed source	Marketable yield[1]		Fruit	Color[2]	Rind thickness	Length	Diameter
		cwt/a	*ton/a*	*no/a*		*in*	*in*	*in*
Seedless (triploid):								
Ace of Hearts	Peto Seed	340	17.0	1839	4.8	0.5	14	31
Boston	Sun Seeds	330	16.5	1888	4.5	0.6	11	30
Constitution	Sun Seeds	272	13.6	1646	4.5	—	—	—
Freedom	Sun Seeds	269	13.4	1452	5.0	0.75	14	29
Laurel	SI	263	13.2	1646	4.0	—	11	31
Nova	Abbott and Cobb	281	14.0	1646	4.5	—	—	
4502	Seed Way	272	13.6	1597	5.0	0.5	10	30
SS5544	Abbott and Cobb	270	13.5	1500	5.0	—	—	—
Triple Crown	Seed Way	319	16	1936	4.2	1.0	12	29

[1] Marketable yield was determined based on individual yields per plot (450 ft²/plot).
[2] Color was rated subjectively based on a 1-5 hedonic scale: 1 (poor color)-5 (deep red).

Although the average weight per melon was less for seedless cultivars, the total number of seedless marketable fruit harvested per acre was 35% higher relative to all seeded cultivars. Moreover, the average yield per acre of all seedless cultivars was 6% higher relative to the seeded watermelon cultivars.

Seed and Plant Sources for Alabama Trials

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

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

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

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

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

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

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

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

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

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

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

Lewis Taylor Farms
Bill Brim
P.O. Box 822
Tifton, GA 31793
Ph: (912) 382-4454

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

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

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

Sources, continued

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

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

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

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

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

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

Seed Sources for Virginia Pumpkin Trial

Harris Moran
Kristin Pusey

Rupp/Seedway
Ken Ludwig

Abbot & Cobb
Pete Suddarth

Johnny's Selected Seeds
Stephen Woodward

Jeffrey's Seed Company
Phil Ramsey

Guidelines for Contributions to the Vegetable Variety Regional Bulletin

Vegetable variety evaluation and selection is an essential part of production horticulture. The vegetable variety regional bulletin is intended to report results of variety trials conducted by research institutions in the Southeast in a timely manner. Its intended audience includes growers, research/extension personnel, and members of the seed industry.

Timeliness and rapid turnaround are essential to better serve our audience. Hence, two bulletins are printed each year: one in November with results from spring crops, and another one in April with results from summer and fall crops. It is essential that trial results are available before variety decisions for the next growing season are made.

Here are a few useful guidelines to speed up the publication process for the next regional bulletin (spring 2000).

When: September 25, 2000
Deadline for spring 2000 variety trial report submissions.

What: Results pertaining to variety evaluation in a broad sense. This includes field performance, quality evaluation, and disease resistance. Here are a few tips:

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

How: Send a disk and hard copy to:

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

Or send e-mail to:
evinson@acesag.auburn.edu, or
jkemble@acesag.auburn.edu