Fall 1994 Commercial Vegetable Variety Trials

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Introduction

AU Commercial Vegetable Variety Trial Program Receives Strong Support from AAES and the Vegetable Industry

ERIC SIMONNE

The Fall Commercial Vegetable Variety Trial report marks the completion of the first year of the renewed vegetable variety trial program at Auburn University. Over 250 cultivars of 14 different vegetable crops were evaluated at eight outlying units of the Alabama Agricultural Experiment Station (AAES). Cultivars were gathered from 20 seed companies, state agencies, or research institutions. Commercial varieties, along with a few advanced experimental lines, were evaluated. Testing of advanced breeding lines provides an evaluation of improved genotypes before their seeds become commercially available to the growers.

Growers, researchers, extension personnel, and other members of the vegetable industry have recognized the usefulness of the information generated by Auburn's variety trial program. Diversity, quality, and timeliness of the information are important to professionals who have interest in cultivar evaluation. The spring and fall 1994 commercial variety trial reports were available within six months after the last harvests. This much-needed quick turn around is the result of a team effort.

The sales and technical representatives of the major seed companies supplied a diverse collection of entries. Personnel at the outlying units of AAES gave continuous support to the program. Substation secretaries provided an electronic version of the data and sent it to campus for immediate processing. The Office of Research Information staff edited and published the final report.

Variety testing is a continuous process and additional evaluations are necessary to identify the varieties best adapted to Alabama growing conditions. More information on the performance of vegetable varieties will be made available to Alabama vegetable growers in the future. Results of the 1994 Spring Vegetable Variety Trials or additional copies of this report are available at the Office of Research Information at (334) 844-4877.

Fall 1994 Weather Highlights

KARL HARKER AND ELLEN BAUSKE

Vegetable variety trials were conducted from September to December at the E.V. Smith Research Center (EVSRC) in Shorter, Piedmont Substation (PS) in Camp Hill, Chilton Area Horticulture Substation (CAHS) in Clanton, North Alabama Horticulture Substation (NAHS) in Cullman, and Sand Mountain Substation (SMS) in Crossville.

Overall, the fall 1994 growing season was characterized by a wet October and unusually late dates for the first hard freeze (under 28°F). Temperatures were slightly below normal in August and September, and slightly above normal in November and December.

At EVSRC, cooler and drier than normal weather prevailed during August and September (Figure 1). Temperatures averaged 1°F below normal with rainfall one to two inches below normal. Rain was reported on only six days during September. October was unusually wet with rain reported on 12 days of the month for a total of 4.75 inches. This total was more than two inches above normal. November and December were warm months with temperatures averaging almost 4°F above normal. The first hard freeze of the fall occurred on Nov. 24 with a low of 26°F reported. This was about a week later than average. November and December were drier than normal. December was particularly dry as rain fell on only five days of the month with only about half of the normal rain reported.

August and September were cooler than normal at PS (Figure 2). Temperatures averaged 2°F below normal in August and 3°F below normal in September. Rain totals were slightly less than normal during these two months. October had more than twice the normal amount of rain; rain was reported on 13 days of the month. October averaged about 2°F below normal. Temperatures in November and December averaged about 2°F above normal. The first hard freeze did not occur until the morning of Nov. 24. The average date of the first hard fall freeze is Nov. 11. November and December were considerably drier than normal with only 2.88 inches of rain reported in November and 3.21 inches in December.

At CAHS, August and September were drier and cooler than normal (Figure 3). Temperatures averaged about 2°F below normal. Rain totals for each month were in the two- to three-inch range, which was one to two inches less than normal. October averaged near normal for both temperature and rainfall. November and December was much warmer than normal with temperatures 3-4°F above normal. The first hard freeze did not occur until Dec. 12. The average date of the first hard freeze is Nov. 9. November and December rain totals were each about one inch less than normal.

Temperatures at NAHS averaged about 2°F below normal in August and September while rain totals were near normal (Figure 4). October was unusually wet with rain reported for almost half the month. The October rain total of almost seven inches was twice the normal amount. In November and December, rainfall was nearly normal and temperatures averaged 3-4°F warmer than normal. The first hard freeze did not occur until Nov. 24. Typically, the first hard freeze occurs around Nov. 6 and has only a 10% chance of occurring after Nov. 20.

At SMS, August and September averaged cooler than normal with maximum temperatures as much as 3-4°F below normal (Figure 5). August was relatively dry, but several heavy showers fell during September. October was wet with rain falling on almost half of the days of the month. The frequent rains resulted in cooler than normal daytime temperatures but warmer than normal nighttime temperatures. Rains were less frequent and lighter than normal during November and December along with warmer than normal temperatures. The first hard freeze did not occur until Nov. 24. The average date of the first hard freeze is Nov. 6.

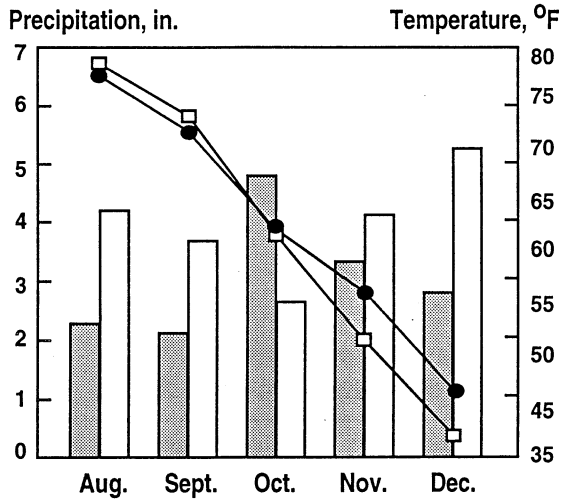


Figure 1. Shorter

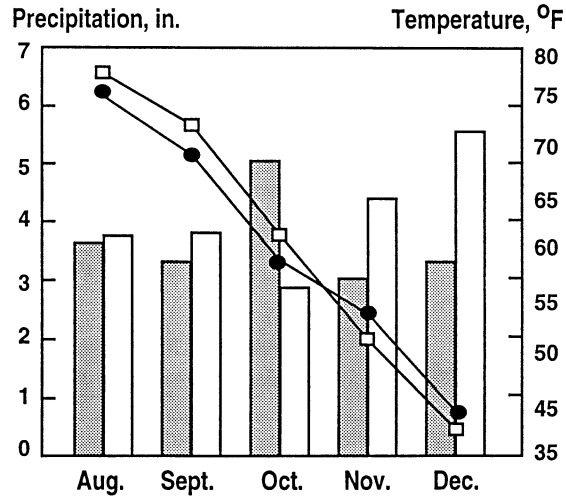


Figure 2. Camp Hill

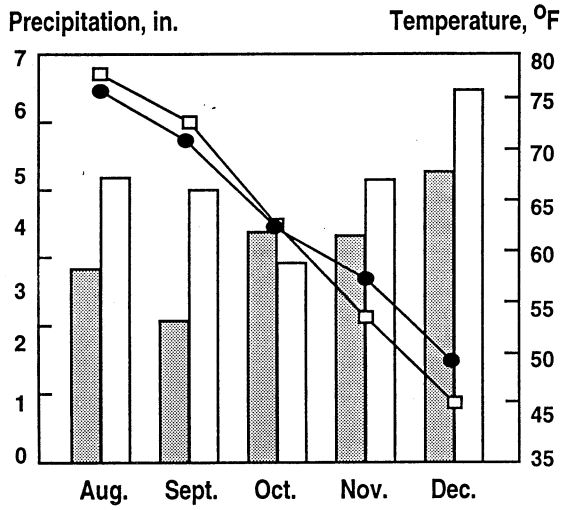


Figure 3. Clanton

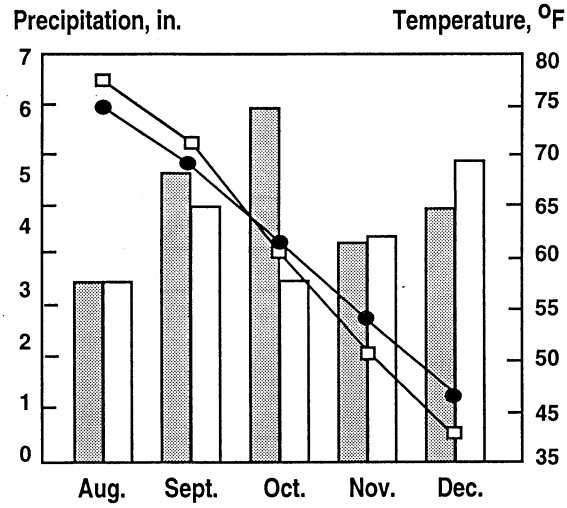
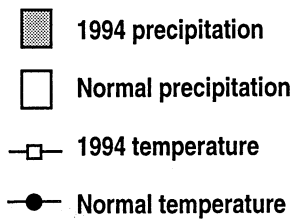


Figure 4. Cullman

Total monthly precipitation, average temperatures, and normal precipitation and temperatures (30-year averages) for (1) the E.V. Smith Research Center, (2) Piedmont Substation, (3) Chilton Area Horticulture Substation, (4) North Alabama Horticulture Substation, and (5) Sand Mountain Substation.



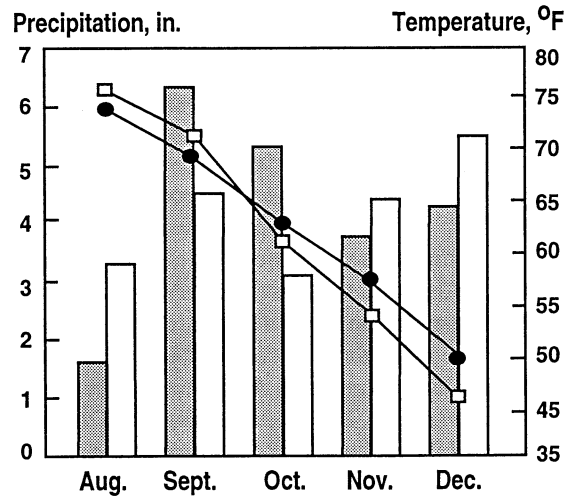


Figure 5. Crossville

Broccoli Evaluated as a First and Double-Crop

ERIC SIMONNE, JIM BANNON, JOHN EASON, MARLIN HOLLINGSWORTH, JOSEPH KEMBLE, JOHN OWEN, JIM PITTS, MARVIN RUF, KENNETH SHORT, AND JAMES WITT

Broccoli variety trials were conducted using plastic mulch and drip irrigation at the Horticulture Unit of the E.V. Smith Research Center (EVSRC) in Shorter, the Piedmont Substation (PS) in Camp Hill, the Chilton Area Horticulture Substation (CAHS) in Clanton, the North Alabama Horticulture Substation (NAHS) in Cullman, and the Sand Mountain Substation (SMS) in Crossville. While most fall broccoli in Alabama is grown on bare ground or new plastic mulch (as a first crop), the potential exists for broccoli production following a spring crop on the same plastic. This practice is referred to as double-cropping. Therefore, the evaluation of selected broccoli varieties was done as a first crop and as a double-crop (Table 1).

TABLE 1. CROPPING SYSTEMS USED IN BROCCOLI CULTIVAR EVALUATION

Location	Plastic Color	Previous Crop
PS	Black	None
SMS	Black	None
EVSRC[1]	Black	Bell Pepper
CAHS[1]	Black	Squash and Bell Pepper[2]
NAHS[1]	White	Tomato and Bell Pepper[2]

[1]Double-cropping.
[2]Each in half of the field.

At all locations, six-week-old broccoli were transplanted on Sept. 9 in staggered, double rows 14 inches apart at an in-row spacing of 18 inches. Plots were 20 feet long and contained 26 plants, which created a stand of approximately 15,000 plants per acre.

For broccoli grown as a first crop (at PS and SMS), soils were fertilized according to the recommendations of the Auburn University Soil Testing Laboratory. Names of chemicals are mentioned only for describing the production practices used. This represents neither a recommendation nor an endorsement of these products. Recommendations for pest and weed control in vegetable production in Alabama may be found in *IPM Commercial Vegetables: Insect, Disease, Nematode and Weed Control Recommendations* (Publication 94IPM-2, Alabama Cooperative Extension Service).

At PS, a 13-13-13 fertilizer was broadcast at a rate of 400 pounds per acre before the beds were formed. Because the field was fallow for several years, fumigation was not needed. Beginning three weeks after transplanting, a 20-10-20 water-soluble fertilizer was injected weekly at a per-acre rate of 12 pounds of nitrogen (N), six pounds of phosphorus (P), and 12 pounds of potassium (K). Insect control included two applications of Dimethoate at (four ounces per acre), four applications of Pounce 3.2 EC (1.6 ounces per acre), and one application of Lannate (7.2 ounces per acre).

At SMS, a 9-7-22 fertilizer was broadcast preplant at a rate of 600 pounds per acre. Beds were formed on Sept. 7. No additional fertilizer was injected. Plants were sprayed twice with Lannate at a rate of eight ounces per acre.

Broccoli was grown as a double-crop at EVSRC, CAHS and NAHS. Previous crops were sprayed with Roundup (at a rate of approximately one gallon per acre) and mowed to remove the dry shoots. New holes were punched for broccoli establishment.

At EVSRC, fertilization consisted of injections of 41 pounds per acre of potassium nitrate (13-0-44) on Sept. 9 and 26, Oct. 10 and 24, and Nov. 8 and 21. In addition, 27 pounds of 20-20-20 were applied on Sept. 19, Oct. 3 and 17, and Nov. 1 and 15. Insect control consisted of applications of Dipel (three pints per acre) on Sept. 16, 26, 28, and 30; Lannate LV (three pints per acre) on Sept. 19 and Oct. 4; and AsanaXL (seven ounces per acre) on Sept. 26, 28, and 30, and Oct. 11 and 18. Fungicides used were Bravo 720 (two pints

per acre) on Sept. 16; Kocide 101 (two pounds per acre) on Sept. 20; and Ridomil MZ 58 (two pounds per acre) on Sept. 20.

At CAHS, 30 pounds each of N, P, and K were injected on Sept. 6 after mowing the previous crop. Fertilizer was thereafter injected at a rate of six pounds of N per acre from 20-20-20 on Oct. 4 and 25, and from potassium nitrate (13-0-44) on Sept. 12, Oct. 11, and Nov. 9. Fungicide applications consisted of Bravo 720 (one pint per acre) on Sept. 13, Oct. 24 and 31, and Nov. 8 and 12. Insect control was provided by applications of Lannate LV (one pint per acre) on Sept. 13, Oct. 24 and 31, and Nov. 8 and 12; and Dipel (two pints per acre) on Oct. 24 and 31, and Nov. 8.

At NAHS, ammonium nitrate was injected at a rate of 50 pounds per acre on Sept. 27 and Oct. 3. Insecticidal treatments included Asana (9.6 ounces per acre) on Sept. 19 and 26 ; Javelin (one pound per acre) on Sept. 26 and Oct. 3; and Lannate (one quart per acre) on Oct. 3. Bravo 720, a fungicide, was applied at a rate of one-half pint in 50 gallons of water per acre on Oct. 10, 17, 24, and 31, and Nov. 7.

At all locations, broccoli heads were harvested and graded when they reached six inches in diameter. Harvest dates were Nov. 8 and 21, and Dec. 1, 8, and 13 at EVSRC; Nov. 1, 16, and 22, and Dec. 1 and 15 at CAHS; Nov. 14, 17 and 21, Dec. 2, and Jan. 10 at PS; Nov. 16 and 21, and Dec. 21 at NAHS; and Nov. 18, 22, and 30, and Dec. 6, 13, and 21 at SMS.

Marketable weight (in numbers of 23-pound cartons) and corresponding number of heads were recorded (Table 2, 3). To account for the difference between first and double-crop, corrected yields were calculated by adjusting for stand. These estimates may be useful to compare variety performance across locations and cropping systems.

TABLE 2. ACTUAL AND CORRECTED NUMBER OF 23-POUND BOXES, MARKETABLE YIELD, AND NUMBER OF MARKETABLE HEADS OF BROCCOLI GROWN ON PLASTIC AS A FIRST CROP

Variety	Seed Source	Actual 23-lb. Boxes	Marketable Yield	Marketable Heads	Corrected 23-lb. Boxes[1]
		No./a.	*Lb./a.*	*No./a.*	*No./a.*
		Piedmont Substation			
Pinnackle	Takii	212	4,868	7,841	224
Mariner	Petoseed	181	4,165	8,168	190
Landmark	Takii	164	3,761	8,276	202
Nun 0945	Nunhems	160	3,689	6,643	217
Green Comet	Takii	144	3,302	7,296	176
Olympus	Takii	143	3,281	6,207	160
Eureka	Stokes	140	3,213	6,207	177
Citation	Harris Seeds	130	2,995	5,881	202
Premium Crop	Takii	127	2,927	6,098	176
Paragon	Stokes	123	2,818	5,990	143
Everest	Rogers	119	2,736	5,445	165
PSX 10990	Petoseed	111	2,546	4,901	144
Greenbelt	Rogers	99	2,287	4,901	159
		Sand Mountain Substation			
PSX 10990	Petoseed	153	3,520	7,405	224
Green Comet	Takii	141	3,250	10,672	204
Olympus	Takii	139	3,189	9,801	183
Mariner	Petoseed	134	3,083	8,712	170
Landmark	Takii	128	2,948	8,821	157
Premium Crop	Takii	115	2,643	8,494	139
Citation	Harris Seeds	105	2,413	7,841	135
Packman	Petoseed	102	2,344	7,405	161
Greenbelt	Rogers	99	2,278	6,207	161
NUN 0945	Nunhems	87	1,999	5,227	174
Eureka	Stokes	75	1,735	4,792	133
Paragon	Stokes	70	1,612	5,227	124

[1]Corrected yields were calculated after adjustment for stand

TABLE 3. ACTUAL AND CORRECTED NUMBER OF 23-POUND BOXES, MARKETABLE YIELD, AND NUMBER OF MARKETABLE HEADS OF BROCCOLI GROWN ON PLASTIC AS A SECOND CROP

Variety	Seed Source	Actual 23-lb. Boxes	Marketable Yield	Marketable Heads	Corrected 23-lb. Boxes[1]
		No./a.	*Lb./a.*	*No./a.*	*No./a.*
E.V. Smith Research Center					
Mariner	Petoseed	134	3,087	7,620	153
Everest	Rogers	98	2,258	6,531	123
Packman	Petoseed	87	1,997	5,552	113
Olympus	Takii	79	1,825	6,206	90
Premium Crop	Takii	74	1,691	4,681	116
Landmark	Takii	71	1,626	3,484	79
Pinnackle	Takii	53	1,214	2,831	75
Paragon	Stokes	47	1,080	3,484	68
Eureka	Stokes	44	1,008	2,177	75
Citation	Harris Seeds	42	958	2,613	49
Green Comet	Takii	41	944	3,919	49
Chilton Area Horticulture Substation					
PSX 10990	Petoseed	103	2,361	6,227	214
Eureka	Stokes	78	1,799	5,269	232
Citation	Harris Seeds	71	1,636	4,311	185
Nun 0945	Nunhems	70	1,616	4,790	203
Premium Crop	Takii	70	1,609	4,790	182
Landmark	Takii	67	1,538	3,832	224
Pinnackle	Takii	65	1,499	3,593	194
Mariner	Petoseed	62	1,427	3,593	190
Packman	Petoseed	59	1,353	3,593	245
Paragon	Stokes	58	1,336	3,353	201
Olympus	Takii	57	1,305	3,593	211
Green Comet	Takii	34	774	2,395	103
North Alabama Horticulture Substation					
Green Comet	Takii	136	3,139	5,520	278
Mariner	Petoseed	106	2,449	5,810	170
Olympus	Takii	105	2,404	5,374	151
Nun 0945	Nunhems	102	2,352	5,229	201
Pinnackle	Takii	98	2,248	4,648	164
Landmark	Takii	97	2,238	3,631	289
Premium Crop	Takii	80	1,849	3,922	155
Everest	Rogers	75	1,727	4,358	223
Citation	Harris Seeds	56	1,281	3,777	114
Greenbelt	Rogers	52	1,200	2,324	155
Eureka	Stokes	40	914	2,179	81

[1]Corrected yields were calculated after adjustment for stand.

Chinese Cabbages Do Well in Cabbage Variety Trial

ERIC SIMONNE, JIM BANNON, JOHN EASON, MARLIN HOLLINGSWORTH, JOSEPH KEMBLE, JOHN OWEN, JIM PITTS, MARVIN RUF, KENNETH SHORT, AND JAMES WITT

Cabbage variety trials were conducted using plastic mulch and drip irrigation at the Horticulture Unit of the E.V. Smith Research Center (EVSRC) in Shorter, the Piedmont Substation (PS) in Camp Hill, the Chilton Area Horticulture Substation (CAHS) in Clanton, the North Alabama Horticulture Substation (NAHS) in Cullman, and the Sand Mountain Substation (SMS) in Crossville. While most fall cabbage in Alabama is grown on bare ground or new plastic mulch (as a first crop), the potential exists for cabbage production following a spring crop on the same plastic. This practice is referred to as double-cropping. Therefore, the evaluation of selected cabbage varieties was done as a first crop or as double-cropping (Table 1). Selected red and oriental cabbage varieties were evaluated along with traditional green ones.

TABLE 1. CROPPING SYSTEMS USED IN CABBAGE VARIETY EVALUATION

Location	Plastic Color	Previous Crop
PS	Black	None
SMS	Black	None
EVSRC	Black	None
CAHS	Black	Squash and Cantaloupe[1]
NAHS	White	Tomato and Bell Pepper[1]

[1] Double-cropping
[2] Each in half of the field

At all locations, six-week-old cabbages were transplanted on Sept. 9 in staggered double rows 14 inches apart at an in-row spacing of 18 inches. Plots were 20 feet long and contained 26 plants, which resulted in approximately 15,000 plants per acre.

For cabbage grown as a first crop (at EVSRC, PS, and SMS), soils were fertilized according to recommendations of the Auburn University Soil Testing Laboratory. Names of chemicals are mentioned only for describing the production practices used. This represents neither a recommendation nor an endorsement of these products. Recommendations for pest and weed control in vegetable production in Alabama may be found in *IPM Commercial Vegetables: Insect, Disease, Nematode and Weed Control Recommendations* (Publication 94IPM-2, Alabama Cooperative Extension Service).

At EVSRC, the soil was fumigated with methyl bromide at a rate of 400 pounds per acre, and beds were formed. Preplant fertilizers provided 30 pounds of nitrogen (as calcium nitrate), 90 pounds of phosphorous (as triple superphosphate), and 90 pounds of potassium (as 0-0-60 muriate potash). Fertilization injections consisted of 41 pounds of potassium nitrate (13-0-44) on Sept. 9 and 26, Oct. 10 and 24, and Nov. 8 and 21; and 27 pounds of 20-20-20 on Sept. 19, Oct. 3 and 17, and Nov. 1 and 15. Insect control consisted of applications of Ambush (eight ounces per acre) on Sept. 13; Dipel (three pints per acre) on Sept. 16, 26, and 30; Lannate LV (three pints per acre) on Sept. 19 and Oct. 4; and Asana XL (seven ounces per acre) on Sept. 26, 28, and 30, and Oct. 11 and 18. Fungicides used were Bravo 720 (three pints per acre) on Sept. 16; Kocide 101 (two pounds per acre) on Sept. 13; and Ridomil MZ 58 (two pounds per acre) on Sept. 13.

At PS, a 13-13-13 fertilizer was broadcast at a rate of 400 pounds per acre before the beds were formed. Because the field had been left uncultivated for several years, fumigation was not necessary. Beginning three weeks after transplanting, a 20-10-20 water-soluble fertilizer was injected weekly at a per-acre rates of 12 pounds of N, six pounds of P, and 12 pounds of K. Insect control consisted of two applications of Dimethoate (four ounces per acre) twice; four applications of Pounce 3.2 EC (1.6 ounces per acre); one application of Lannate (7.2 ounces per acre).

At SMS, a 9-7-22 fertilizer was broadcast preplant at a rate of 600 pounds per acre. Beds were formed on Sept. 7. No additional fertilizer was supplied with the drip tubing. Plants were sprayed twice with Lannate at a rate of eight ounces per acre.

Cabbage was grown as a double-crop at CAHS and NAHS. Previous crops were sprayed with Roundup (approximately one gallon per acre) and mowed to remove the dry shoots. New holes were punched for cabbage establishment.

At CAHS, 30 pounds each of N, P, and K were injected on Sept. 6 after removing the shoots of the

Table 2. Actual and Corrected Number of 50-Pound Boxes, Marketable Yield, and Number of Marketable Heads of Cabbage Grown on Plastic as a First Crop[1]

Variety	Seed Source	Actual 50-lb. Boxes	Marketable Yield	Marketable Heads	Corrected 50-lb. Boxes[2]
		No./a.	*Lb./a.*	*No./a.*	*No./a.*
		E.V. Smith Research Center			
Kasumi (O)[3]	Stokes	1,155	57,759	9,474	1,166
Summertime II (O)[3]	Stokes	1,155	57,764	9,474	1,201
Orange Queen (O)[3]	Stokes	166	8,311	1,525	168
Wanda	Nunhems	442	22,082	9,256	446
XPH 5781	Asgrow	396	19,801	6,860	392
CB-7	Rogers	355	17,774	6,861	359
PSR 18589	Petoseed	307	15,364	5,227	359
Quick Start	Takii	306	15,304	6,752	354
Constanza	Petoseed	280	13,986	5,990	282
Bravo	Harris Seeds	277	13,871	5,118	291
Rio Verde	Rogers	242	12,084	3,703	245
XPH 5785	Asgrow	224	11,191	4,574	224
Izalco	Rogers	199	9,959	4,901	201
Multikeeper	Stokes	39	1,960	762	40
		Piedmont Substation			
Kasumi (O)[3]	Stokes	424	21,181	12,524	454
Jade Pagoda (O)[3]	Harris Seeds	357	17,860	6,098	383
Monument (O)[3]	Stokes	327	16,367	9,039	347
Orange Queen (O)[3]	Stokes	111	5,568	2,940	127
Cheers	Takii	513	25,660	6,207	568
Blue Jem	Harris Seeds	442	22,079	6,207	446
Constanza	Petoseed	412	20,582	8,494	424
PS 63880	Petoseed	406	20,310	3,049	445
XPH 5785	Asgrow	356	17,778	4,247	359
Survivor	Stokes	347	17,329	7,841	414
PSR 18589	Petoseed	252	12,587	5,663	422
Cardinal (red)	Harris Seeds	28	1,416	980	61
Rougette (red)	Vilmorin	-	0	-	-
		Sand Mountain Substation			
Summertime II (O)[3]	Stokes	654	32,703	2,069	709
Kasumi (O)[3]	Stokes	590	29,523	2,831	675
Orange Queen (O)[3]	Stokes	207	10,373	1,579	247
Blue Jem	Harris Seeds	294	14,723	4,356	340
Wanda	Nunhems	275	13,754	653	376
XPH 5781	Asgrow	240	11,979	3,267	290
XPH 5785	Asgrow	194	9,692	2,723	212
Constanza	Petoseed	182	9,115	2,614	249
CB-7	Rogers	181	9,039	2,178	376
Cheers	Takii	153	7,656	2,069	197
Bravo	Harris Seeds	83	4,138	1,198	106
Cardinal (red)	Harris Seeds	38	1,884	545	89
Multikeeper	Stokes	20	1,013	218	25
Rougette (red)	Vilmorin	-	0	-	-

[1]The yields of red cabbage varieties were low due to low survival rate after transplanting.
[2]Corrected yields were calculated after adjustment for stand.
[3]These cabbages are Oriental; others are standard varieties.

previous crop. Fertilizer was injected at a rate of six pounds of N per acre from 13-13-13 on Oct. 4 and 25, and potassium nitrate (20-20-20) on Sept. 12, Oct. 11, and Nov. 9. Fungicide applications consisted of Bravo 720 (one pint per acre) on Sept. 13, Oct. 24 and 31, and Nov. 8 and 12. Insect control was provided by applications of Lannate LV (one pint per acre) on Sept. 13, Oct. 24 and 31, and Nov. 8 and 12; and Dipel (two pints per acre) on Oct. 24 and 31, and Nov. 8.

At NAHS, ammonium nitrate was injected at a rate of 50 pounds per acre on Sept. 27 and Oct. 3. Insecticide applications included Asana (9.6 ounces per acre) on Sept. 19 and 26; Javelin (one pound per acre) on Sept. 26 and Oct. 3; and Lannate (one quart per acre) on Oct. 3. Bravo 720, a fungicide, was applied on Oct. 10, 17, 24, and 31, and Nov. 7 at a rate of one-half pint in 50 gallons of water per acre.

When they reached marketable size, cabbage heads were harvested with four wrapper leaves and graded according to *United States Standards for Grades of Cabbage* (Publication 46 FR 63293, U.S. Department of Agriculture). Harvest dates were Nov. 10, 11, and 30 at EVSRC; Nov. 16 and Dec. 1 and 15 at CAHS; Dec. 19 and Jan. 10 and 17 at PS; Nov. 16 and 21, and Dec. 21 at NAHS; and Dec. 2, 9, and 21 at SMS.

Marketable weight (in numbers of 50-pound cartons) and corresponding number of heads were recorded (Table 2, 3). To account for the difference between first and double crops, corrected yields were calculated by adjusting for stand. These estimates may be useful to compare variety performance across locations and cropping systems.

TABLE 3. ACTUAL AND CORRECTED NUMBER OF 50-POUND BOXES, MARKETABLE YIELD, AND NUMBER OF MARKETABLE HEADS OF CABBAGE GROWN ON PLASTIC AS A SECOND CROP[1]

Variety	Seed Source	Actual 50-lb. Boxes	Marketable Yield	Marketable Heads	Corrected 50-lb. Boxes[2]
		No./a.	*Lb./a.*	*No./a.*	*No./a.*
Chilton Area Horticulture Substation					
Jade Pagoda (O)[3]	Harris Seeds	643	32,174	7,904	1,046
Monument (O)[3]	Stokes	289	14,435	4,790	600
Kasumi (O)[3]	Stokes	285	14,274	4,551	471
Orange Queen (O)[3]	Takii	263	13,149	3,832	464
CB-7	Rogers	248	12,382	6,227	460
Blue Jem	Harris Seeds	186	9,288	3,832	471
Constanza	Petoseed	172	8,603	3,832	416
Multikeeper	Stokes	130	6,514	2,874	713
Cheers	Takii	104	5,212	1,916	374
PSR 152999	Petoseed	86	4,292	1,677	372
Bravo	Harris Seeds	71	3,573	1,437	372
Rio Verde	Rogers	68	3,425	1,437	419
Green Cup	Takii	-	0	-	-
PS 63880	Petoseed	-	0	-	-
Rougette (red)	Vilmorin	-	0	-	-
North Alabama Horticulture Substation					
Monument (O)[3]	Stokes	873	43,642	10,603	1,164
Jade Pagoda (O)[3]	Harris Seeds	695	34,773	7,263	1,113
Kasumi (O)[3]	Stokes	589	29,465	6,682	1,362
PS 63880	Petoseed	226	11,324	4,793	368
Constanza	Petoseed	205	10,229	3,777	409
Izalco	Rogers	205	10,246	5,084	296
Cheers	Takii	182	9,113	4,503	395
Bravo	Harris Seeds	155	7,765	3,631	317
Survivor	Stokes	102	5,094	2,615	424
XPH 5785	Asgrow	98	4,908	2,324	232
Wanda	Nunhems	85	4,260	2,324	385
Multikeeper	Stokes	55	2,750	1,017	102
Quick Start	Takii	28	1,380	726	93
Rougette (red)	Vilmorin	-	0	-	-

[1]The yields of red cabbage varieties were low due to low survival rate after transplanting.
[2]Corrected yields were calculated after adjustment for stand.
[3]These cabbages are Oriental; all others are standard varieties.

Sweetpotato Breeding Lines Show Good Yield Potential for Alabama

ERIC SIMONNE, JIM BANNON, JIM DANGLER, MARLIN HOLLINGSWORTH, JIM PITTS, AND JAMES WITT

Sweetpotato variety trials were conducted at the Horticulture Unit at the E.V. Smith Research Center (EVSRC), the Chilton Area Horticulture Substation (CAHS) and the North Alabama Horticulture Substation (NAHS).

Sweetpotato seed roots from nine commercial varieties and 10 advanced breeding lines were planted in a heated bed at NAHS between March 25 and April 4 for slip production. Slips were removed from the beds on May 28 and bundled for shipment to the locations of the trials. At all the locations, slips were planted on June 1 in single row, 30-foot-long plots. Within-row spacing was one foot.

At EVSRC, a combination of 15.5-0-0, 0-60-0, and 0-0-46 fertilizers was preplant incorporated on May 16. This provided (per acre) 40 pounds of nitrogen (N), 60 pounds of phosphorus (P) and 60 pounds of potassium (K). On June 22, 40 pounds of N were sidedressed using a 15.5-0-0 fertilizer. A nematicide (Mocap 10 G) was preplant incorporated at a rate of 60 pounds per acre on May 17.

At CAHS, rows were 3.55 feet wide. Fertilization consisted of applications of 40 pounds of N, preplant and sidedressed on July 11. Weed control was provided by preplant applications of Eptam EC (three pounds per acre) and Sencor FL (eight ounces per acre).

At NAHS, a 5-10-15 fertilizer was broadcast preplant at a rate of 1,000 pounds per acre. Command (herbicide) was preplant applied at a rate of three quarts per acre on May 26. Plots were 3.7 feet wide. Sweetpotato slips were irrigated with 0.75 inch of water on June 1. Total rainfall during the growing season was 27 inches. Insect control consisted of applications of Lorsban (two quarts per acre) and Temik (20 pounds per acre) on May 26, and of Pencap M (one quart per acre) and Thiodan 50 WP (one pound per acre) on Aug. 30.

Sweetpotatoes were harvested on Oct. 6 at EVSRC, Oct. 19 at CAHS, and Oct. 17 at NAHS. Roots were graded as US #1 (roots two to 3.5 inches in diameter, three to nine inches long, well shaped, and free of defects), canner (roots one to two inches in diameter, two to seven inches long), jumbo (roots that exceed the diameter, length, and weight requirements of the US #1 grade but are of marketable quality), or cull (roots at least one inch in diameter but so misshapen or unattractive that they could not be classified as marketable roots). Marketable yield was calculated by adding the yields of the US #1, canner, and jumbo grades (Table 1).

TABLE 1. SWEETPOTATO MARKETABLE YIELD AND GRADE DISTRIBUTION

Variety	Type[1]	US #1	Canner	Jumbo	Cull	Total Market.[2]	Percent US #1[3]
		Bu./a.[4]	*Bu./a.*	*Bu./a.*	*Bu./a.*	*Bu./a.*	
E.V. Smith Research Center							
Darby	CV	590	162	210	63	963	63
Jewel	CV	368	180	39	12	587	63
Red Star	CV	338	154	74	28	565	61
Georgia Jet	CV	303	95	150	180	549	56
Beauregard	CV	385	95	39	17	519	76
Hernandez	CV	265	164	16	26	446	59
Cordner	CV	290	143	11	86	444	66
Gold Star	CV	132	199	13	32	345	38
Carolina Nugget	CV	155	152	9	38	316	49
NC-75	BL	468	137	189	25	794	59
L-89-72	BL	414	117	117	19	648	63
L-89-110	BL	305	206	20	28	531	58
L-87-54	BL	333	100	78	67	511	66
W-210	BL	185	99	88	33	372	50
Chilton Area Horticulture Substation							
Georgia Jet	CV	169	316	237	80	721	24
Beauregard	CV	144	244	229	112	617	23
Gold Star	CV	128	252	207	66	586	22
Jewel	CV	167	205	120	48	491	35
Cordner	CV	185	199	67	69	451	38
Darby	CV	82	141	214	62	437	19
Hernandez	CV	212	177	46	61	435	48
Carolina Nugget	CV	137	143	46	13	325	41
Red Star	CV	151	130	23	440	304	52
NC-C59	BL	129	232	251	79	612	20
L-89-72	BL	148	214	247	33	608	24
L-87-54	BL	148	235	218	27	601	25
NC-75	BL	180	168	223	81	570	33
W-210	BL	153	322	43	137	517	30
NC92-08	BL	116	200	70	202	386	29
NC-C58	BL	84	94	97	8	275	31
North Alabama Horticulture Substation							
Beauregard	CV	395	186	34	166	615	65
Darby	CV	434	127	40	103	601	72
Georgia Jet	CV	332	175	14	170	522	64
Hernandez	CV	205	223	0	95	428	51
Red Star	CV	108	227	32	219	367	36
Jewel	CV	143	186	0	101	329	42
Carolina Nugget	CV	151	138	0	156	289	52
Cordner	CV	64	99	5	65	168	39
Gold Star	CV	35	113	0	23	148	26
L-89-72	BL	601	176	32	79	808	73
NC-75	BL	408	242	55	32	706	56
L-89-110	BL	391	201	48	14	639	60
NC-C59	BL	424	108	78	86	610	70
NC-C58	BL	322	141	97	46	560	58
L-87-54	BL	374	171	14	106	559	67
NC92-08	BL	156	214	0	104	370	45
W-294	BL	163	120	0	72	283	54
W-210	BL	92	143	0	155	235	43
W-285	BL	70	90	0	47	160	32

[1]CV = Commercial Variety; BL = Breeding Line.
[2]Marketable yield was calculated by adding the yields of the US #1, canner, and jumbo grades.
[3]Percent US #1 was calculated by dividing the yield of the US#1 grade by the marketable yield (culls not included).
[4]50-pound bushels per acre.

Appendix

Seed Suppliers

Asgrow Seed Co.
Brent Farrington
P.O. Box 48503
Doraville, GA 30362
Ph. 1-800-334-6571

Harris Seeds
Bob Wilkins
60 Saginow Dr.
Rochester, NY 14692-2960
Ph. 1-800-544-7938

Nunhems Seed Co.
Hank Mendee
PO Box 18
Lewisville, ID 83431
Ph. (208) 754-8666

Petoseed Co.
Mario Rivas
3085 Whilraway Trail
Tallahassee, FL 32308
Ph. (904) 668-9068

Rogers
Curt Pollard
2101 Melrose Drive
Valdosta, GA 31602
Ph. (912) 560-1863

Stokes Seeds Inc.
Mark Kaminski and Joe Butwin
PO Box 548
Buffalo, NY 14240-0548
Ph. (716) 695-6980

Takii Seed
Yuki Benech
301 Natividad Rd
Salinas, CA 93906
Ph. (408) 443-4901

Vilmorin
Gilles Laurin
P.O. Box 707
Empire, CA 95319
Ph. (209) 529-6000

Transplant Production

Mobley Greenhouse Inc.
Patrick Mobley
Route 8, Box 634
Moultrie, GA 31768
Ph. 1-800-345-5783

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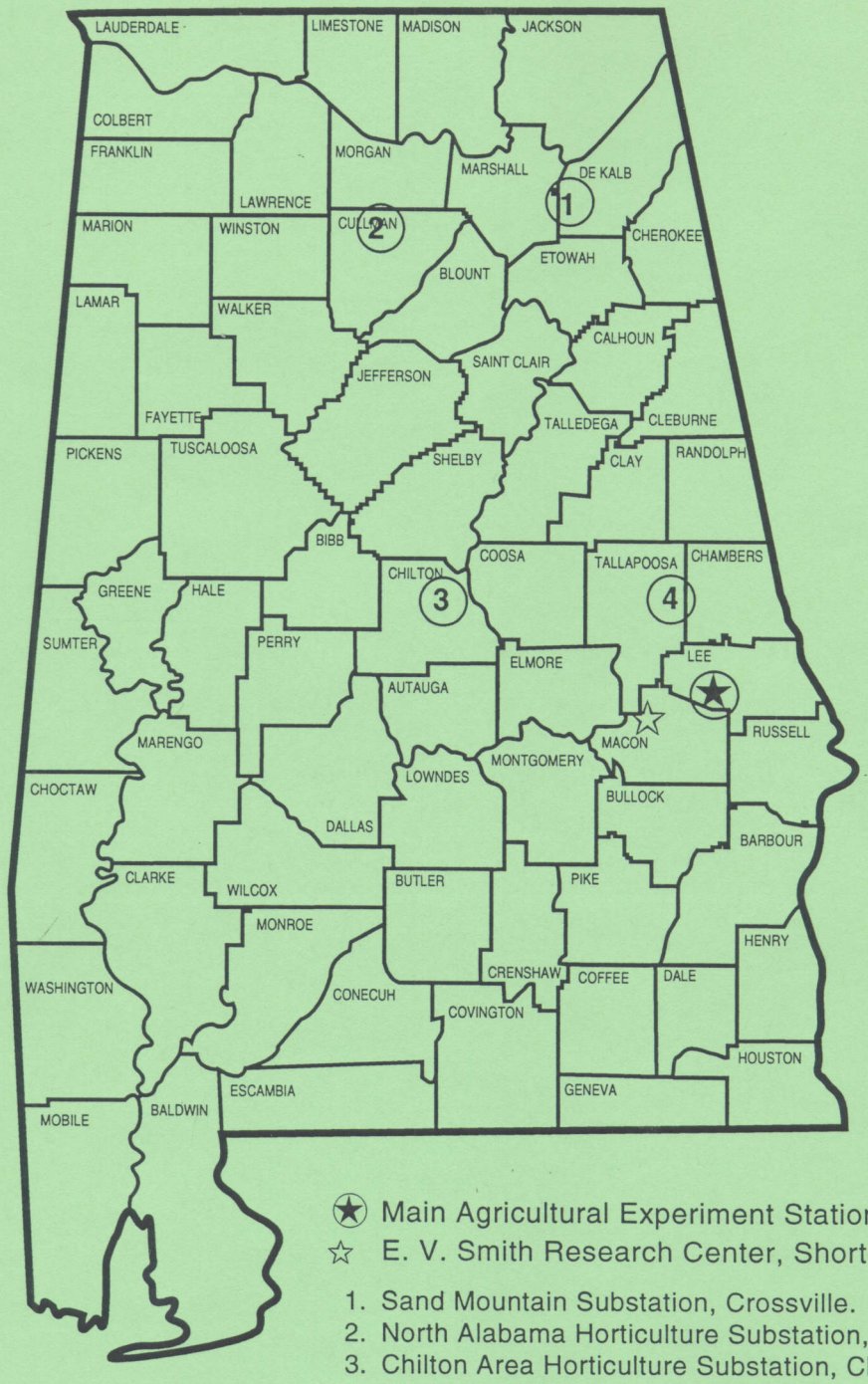
LOCATIONS OF PARTICIPATING RESEARCH UNITS



★ Main Agricultural Experiment Station, Auburn.

☆ E. V. Smith Research Center, Shorter.

1. Sand Mountain Substation, Crossville.
2. North Alabama Horticulture Substation, Cullman.
3. Chilton Area Horticulture Substation, Clanton.
4. Piedmont Substation, Camp Hill.