

# Watermelon & Cantaloupe Variety Trials

## 1988-1990

G.E. Boyhan, J.D. Norton, B.R. Abraham, J.A. Pitts, E.L. Carden, M.H. Hollingsworth, J.T. Eason, and H.W. Ivey<sup>1</sup>

**W**ATERMELON VARIETY trials were conducted at five Alabama locations over a 3-year period. The locations were the Gulf Coast Substation at Fairhope, Wiregrass Substation at Headland, Chilton Area Horticulture Substation at Clanton, North Alabama Horticulture Substation at Cullman, and Sand Mountain Substation at Crossville. There were four replications per variety each year. Plots consisted of 10 hills with an in-row plant spacing of 72 inches (6 feet) and between-row plant spacing of 88 inches (7.33 feet), except at the Gulf Coast Substation where between-row plant spacing was 120 inches (10 feet). Observational data were based on single plots (replication). Total number and yield of marketable melons were recorded per plot. Additionally, two representative melons from each plot were measured for length, width, rind thickness, and soluble solids.

Cantaloupe trials were conducted at the Sand Mountain Substation over the 3-year period. This consisted of a replicated trial with four replications per variety. Each plot consisted of 10 hills with an in-row spacing of 48 inches (4 feet) and a between-row spacing of 44 inches (3.67 feet). Total number and weight of marketable fruit were recorded. In addition, two representative fruit from each plot were harvested and measured for length, width, flesh depth, and soluble solids.

Both watermelons and cantaloupes were grown according to standard fertilizer and pesticide recommendations. All trials were irrigated as needed.

### Watermelon Trials

Watermelons can be categorized into several groups based on fruit size and rind pattern, table 1. Each group can be described in terms of a representative cultivar. These trials involved four groups of watermelons represented by Charleston Gray, Sugar Baby, Jubilee, and Crimson Sweet. Charleston Gray represents a

<sup>1</sup>Respectively, Senior Research Associate, Professor, and Technician of Horticulture; Superintendent, Chilton Area Horticulture Substation; Superintendent, Gulf Coast Substation; Superintendent, North Alabama Horticulture Substation; Superintendent, Sand Mountain Substation; and Superintendent, Wiregrass Substation.

group of oblong melons, weighing approximately 20-40 pounds, with a light green rind. Sugar Baby represents a group, also called ice box types, which are small round melons usually under 15 pounds. Jubilee is the same size and shape as a Charleston Gray but with a rind having a light green stripe on a dark green background. Finally, the Crimson Sweet type is a round melon weighing about 20-30 pounds. The rind pattern can be either striped or solid.

The Charleston Gray group showed no significant differences at any location, except at the Sand Mountain Substation where Charlee yielded the highest. Charlee has better disease resistance, especially to Fusarium wilt, and tends to be a slightly smaller melon than Charleston Gray.

The Sugar Baby, or ice box group, had three entries. Mickylee and Minilee were superior overall to Sugar Baby, especially concerning disease resistance and resistance to sunscald. Mickylee and Minilee have light green rinds and dark red flesh. Sugar Baby, on the other hand, has a dark green rind.

The Jubilee group had only two entries, Jubilee and AU-Jubilant. AU-Jubilant has greater foliar disease resistance than Jubilee.

The Crimson Sweet group is the largest group in the trials, with seven entries. Crimson Tide and Mirage LS are both hybrid melons and consequently had the highest overall yields except at the Sand Mountain Substation. Although Mirage LS was placed in the Crimson Sweet group, this variety does not have the characteristic round shape of the others. The shape of Mirage LS is slightly oblong, intermediate between Jubilee and Crimson Sweet.

The Sugarlee and Dixielee varieties in this group have light green rinds with a dark green stripe. Their flesh is extremely red and high in sugar content. AU-Producer is an open-pollinated variety developed at Auburn University. This variety has excellent disease resistance, including resistance to Fusarium wilt, and high quality fruit. AW-83-1001-CSY is a test variety, similar to AU-Producer, but with yellow flesh. Crimson Sweet is an older open-pollinated variety developed in the 1960's. It has high quality fruit, but generally has lower disease resistance.





Significant differences in percent soluble solids (sugar content), table 2, were found among all varieties tested. Sugarlee had the highest average sugar content recorded, 10.8 percent soluble solids.

Huck Finn Hybrid had the highest yield in the observational

trials with 38,606 pounds per acre, as seen in table 3. The highest yield with more than 1 year of data was made by Sangria, 28,892 pounds per acre. The melon with the highest percent soluble solids was AW-82-50CS (10.9 percent). This is an advanced breeding line developed at Auburn University.

TABLE 1. WATERMELON YIELDS, BY LOCATION AND FRUIT TYPE, REPLICATED VARIETY TRIAL, 1988-90

Variety	Chilton	N. Alabama	Sand Mt.	Gulf Coast <sup>1</sup>	Wiregrass
	<i>Lb.</i>	<i>Lb.</i>	<i>Lb.</i>	<i>Lb.</i>	<i>Lb.</i>
<b>Charleston Gray type</b>					
Charleston Gray .....	25,531	29,274	18,418ab <sup>2</sup>	27,635	18,126
Charlee .....	29,806	40,196	27,360d	36,384	19,889
Sweet Charlie .....	33,148	30,496	20,872bc	30,268	17,794
Charleston Elite .....	27,573	28,929	14,531a	30,825	22,794
<b>Ice box type</b>					
Sugar Baby .....	10,388a <sup>2</sup>	20,202a <sup>2</sup>	13,076a <sup>2</sup>	12,170a <sup>2</sup>	14,434
Mickylee .....	29,252b	27,296ab	20,780b	25,038b	13,768
Minilee .....	25,617b	33,488b	15,544ab	15,055a	9,936
<b>Jubilee group</b>					
Jubilee .....	21,646	23,399	15,574	25,881	15,342
AU-Jubilant .....	27,062	38,124	20,008	31,676	16,951
<b>Crimson Sweet group</b>					
Crimson Sweet .....	30,546	31,141d <sup>2</sup>	26,318	18,900ab <sup>2</sup>	12,774ab <sup>2</sup>
AU-Producer .....	30,486	22,731a	22,749	27,991c	17,919bcd
Sugarlee .....	31,061	29,374b	23,750	29,362c	14,616bcd
Dixielee .....	23,905	26,179a	22,915	18,667a	12,755a
Mirage LS .....	37,128	51,996f	24,430	43,299d	20,386d
AW-83-1001-CSY .....	29,786	30,597c	24,936	22,470bc	12,952bc
Crimson Tide .....	33,659	36,969e	23,729	38,803d	19,541d

<sup>1</sup> Only 2 years of data — 1989-90.

<sup>2</sup> Means followed by the same letter are not significantly different at the 5 percent level, Duncan's Multiple Range Test.

TABLE 2. AVERAGE WATERMELON FRUIT CHARACTERISTICS FOR ALL LOCATIONS, REPLICATED TRIAL, 1988-90

Variety	Length	Width	Rind	Soluble solids	Wt./fruit
	<i>In.</i>	<i>In.</i>	<i>In.</i>	<i>Pct.</i>	<i>Lb.</i>
Sweet Charlie .....	16.3	8.0	0.7	9.1a <sup>1</sup>	18.7
AU-Jubilant .....	15.9	8.1	.8	9.3ab	22.6
Charleston Elite .....	15.8	8.1	.7	9.5ab	21.4
Sugar Baby .....	8.5	7.7	.5	9.5ab	9.1
Jubilee .....	16.4	8.3	.7	9.6abc	21.1
Charlee .....	16.5	8.0	.7	9.7abc	18.9
Charleston Gray .....	15.9	8.0	.7	9.8bc	18.8
Crimson Sweet .....	11.0	9.3	.7	10.0bcd	17.4
Mickylee .....	8.9	8.1	.6	10.1bcde	9.0
Crimson Tide .....	11.8	9.2	.8	10.2bcde	16.9
Minilee .....	8.2	7.3	.6	10.2cde	7.8
Mirage LS .....	13.9	9.0	.8	10.2cde	19.7
AU-Producer .....	10.8	9.4	.8	10.5de	16.3
Dixielee .....	11.1	9.5	.6	10.7e	16.7
AW-83-1001-CSY .....	10.7	9.3	.7	10.7e	15.8
Sugarlee .....	10.4	8.9	.7	10.8e	14.7

<sup>1</sup> Means followed by the same letter are not significantly different at the 5 percent level, Duncan's Multiple Range Test.



TABLE 3. AVERAGE WATERMELON YIELDS AND FRUIT CHARACTERISTICS, OBSERVATIONAL TRIALS, 1988-90

Variety	Length	Width	Rind	Soluble solids	Wt./fruit	Yield/acre
	<i>In.</i>	<i>In.</i>	<i>In.</i>	<i>Pct.</i>	<i>Lb.</i>	<i>Lb.</i>
AW-82-50CS <sup>1</sup> .....	10.6	9.7	0.6	10.9	15.6	23,866
Cardinal Hybrid <sup>1</sup> .....	12.1	7.8	.6	9.6	11.9	24,331
Carmen F1 Hybrid <sup>2</sup> .....	10.8	9.6	.8	9.1	17.9	34,130
Golden Honey <sup>3</sup> .....	11.8	8.8	.9	9.1	2.5	19,806
Huck Finn Hybrid <sup>2</sup> .....	13.9	9.4	.8	10.7	15.6	38,606
Jubilation <sup>2</sup> .....	14.2	9.3	.7	10.6	16.8	32,831
Jubilee II <sup>2</sup> .....	15.8	8.3	.7	9.7	18.6	38,273
Long Crimson <sup>2</sup> .....	12.7	9.1	.8	9.2	14.9	29,353
NV 4309 <sup>2</sup> .....	15.1	9.2	.7	9.2	19.4	28,218
Sangria <sup>1</sup> .....	16.1	7.7	.6	9.9	13.1	28,892
Sunshade <sup>2</sup> .....	13.5	8.4	.6	10.1	16.5	23,645
Sunsweet <sup>2</sup> .....	14.4	8.2	.8	10.3	13.8	25,452
Tendersweet Orange Flesh <sup>1</sup> .....	12.7	8.6	.6	9.3	15.5	25,988
Whillwhite Tendergold <sup>1</sup> .....	13.1	9.0	.8	9.5	14.4	32,708
XPH 5365 <sup>2</sup> .....	13.2	8.2	.7	9.2	14.8	35,487
XPH 5366 <sup>2</sup> .....	13.2	8.5	.7	10.3	14.5	32,225
XPH 9029 Seedl. <sup>4</sup> .....	9.9	8.5	.7	9.5		
XPH 9030 Seedl. <sup>4</sup> .....	8.6	8.2	1.2	9.2		
XPH 9035 Seedl. <sup>4</sup> .....	8.7	8.1	.5	8.0		
XPH 9041 Seedl. <sup>4</sup> .....	9.6	8.7	.7	10.0		
Yellow Crimson <sup>1</sup> .....	10.7	9.4	.7	10.6	12.1	25,542

<sup>1</sup>Data for 2 years.<sup>2</sup>Data for 1 year.<sup>3</sup>Data for 3 years.<sup>4</sup>Data for 1 year, North Alabama Horticulture Substation.

### Cantaloupe Trials

Cantaloupes can be categorized into three groups based on size and fruit characteristics. The first group, called the western or shipping type, are small, round, netted melons with little or no sutures. These melons tend to be very firm even at maturity and are consequently used for shipping. The next group is the eastern or jumbo type. These are large melons (3-5 pounds), often with deep sutures. The netting on these will vary from heavy to light. They are not as firm as the shipping type, therefore they tend to be grown for local markets. The last group includes the honeydew melons, which have a smooth rind and are green or yellow with green or cream colored flesh.

Mainstream, Magnum .45, Mission, Chilton, and Gulfcoast are shipping type melons, whereas Planter's Jumbo, Saticoy Hy-

brid, AUrora, and Summet are jumbo or eastern types. Mainstream, Planter's Jumbo, Chilton, Gulfcoast, and AUrora are open-pollinated types; the rest are hybrids. There were no significant differences in yields for any of the varieties, as shown in table 4. Magnum .45 was significantly lower in percent soluble solids than Gulfcoast, Mainstream, Mission, and Planter's Jumbo.

The highest yield in the observational trials was by Grande Gold, 45,683 pounds per acre, table 5. The highest average yield with more than 1 year of data was made by Topflight, 23,930 pounds per acre. The variety with the highest percent soluble solids (11.9%) was Super 45. The highest average percent soluble solids with more than 1 year of data was 11.2 percent for Hy-Mark. Caution should be taken when interpreting observational data since they result from unreplicated plots.

TABLE 4. CANTALOUPE CHARACTERISTICS, REPLICATED TRIALS, SAND MOUNTAIN SUBSTATION, 1988-90

Variety	Length	Width	Flesh	Soluble solids	Wt./melon	Yield/acre
	<i>In.</i>	<i>In.</i>	<i>In.</i>	<i>Pct.</i>	<i>Lb.</i>	<i>Lb.</i>
AUrora .....	5.6	5.1	1.5	7.6ab <sup>1</sup>	3.1	14,049 <sup>2</sup>
Chilton .....	5.1	5.0	1.3	7.8ab	2.8	16,620
Gulfcoast .....	5.4	5.2	1.4	8.6b	3.0	13,843
Magnum .45 .....	5.4	5.0	1.4	6.3a	3.2	14,043
Mainstream .....	5.5	5.2	1.5	9.8b	2.9	17,005
Mission .....	5.6	5.0	1.4	8.7b	3.0	18,466
Planter's Jumbo .....	5.8	5.4	1.5	8.9b	3.4	16,935
Saticoy Hybrid .....	5.7	5.2	1.4	8.2ab	3.7	16,165
Summet .....	6.0	5.6	1.5	8.2ab	4.0	20,868

<sup>1</sup>Means followed by the same letter are not significantly different at the 5 percent level, Duncan's Multiple Range Test.<sup>2</sup>Means are not significantly different.



TABLE 5. CANTALOUPE CHARACTERISTICS, OBSERVATIONAL TRIALS, SAND MOUNTAIN SUBSTATION, 1988-90

Variety	Length	Width	Rind	Soluble solids	Wt./melon	Yield/acre
	<i>In.</i>	<i>In.</i>	<i>In.</i>	<i>Pct.</i>	<i>Lb.</i>	<i>Lb.</i>
AC-82-37 <sup>1</sup> .....					6.6	37,619
AC-82-45A <sup>1</sup> .....					2.7	7,994
AC-86-55 <sup>2</sup> .....	6.2	5.7	1.8	8.4	2.8	11,771
All Star <sup>1</sup> .....					3.7	25,993
Ananas <sup>1</sup> .....					2.4	25,736
Aragon <sup>3</sup> .....	6.1	5.4	1.4	6.7	2.5	10,958
Argonaut <sup>1</sup> .....	6.9	6.8	1.6	11.6	5.1	24,932
Caravelle <sup>3</sup> .....	5.5	4.9	1.4	7.1	3.0	13,318
Classic <sup>1</sup> .....					2.9	22,077
Dallas <sup>1</sup> .....	6.4	6.1	1.6	8.2	3.6	28,421
Durango <sup>1</sup> .....	6.0	5.7	1.6	10.6	3.1	15,096
Eastern Star <sup>1</sup> .....					2.8	25,763
Easy Rider <sup>1</sup> .....					3.5	26,614
Golden Harvest <sup>1</sup> .....	5.9	5.7	1.2	4.9	5.4	8,734
Goldie <sup>1</sup> .....	7.4	5.3	1.5	7.9	3.2	16,500
Grande Gold <sup>1</sup> .....	7.3	6.9	1.7	10.4	3.9	45,683
Hiline <sup>3</sup> .....	4.9	4.8	1.3	7.8	2.6	10,551
HMX 5609 <sup>1</sup> .....					2.9	9,795
Honey Dew <sup>1</sup> .....	7.1	6.6	1.5	8.5	3.9	19,989
HXP 3593 <sup>1</sup> .....					3.9	26,493
Hy-Mark <sup>2</sup> .....	5.7	5.3	1.5	11.2	3.1	17,808
Hybrid 86 M166 <sup>1</sup> .....					2.1	10,586
Hybrid Chamel <sup>2</sup> .....	5.2	5.2	1.5	8.4	3.0	18,932
Hybrid Dixie Jumbo <sup>1</sup> .....					3.0	17,068
Hybrid Earli-Dew <sup>1</sup> .....					5.6	15,096
Laguna <sup>3</sup> .....	5.8	5.2	1.5	7.3	3.2	17,893
Mainpak <sup>3</sup> .....	5.5	5.0	1.4	8.9	2.2	21,205
Moonshine <sup>1</sup> .....	7.0	7.4	2.0	11.7	4.4	25,277
Morning Dew <sup>1</sup> .....					2.3	12,828
Palestro <sup>1</sup> .....	5.8	6.0	1.6	10.1	3.4	19,898
Primo <sup>1</sup> .....	7.4	6.6	1.5	11.6	5.7	41,431
PS 2083 <sup>1</sup> .....					2.6	12,909
PSX 2284 <sup>1</sup> .....					2.9	14,097
Pulsar <sup>1</sup> .....	6.8	7.7	1.7	9.5	5.0	22,520
Road Runner <sup>3</sup> .....	6.6	6.4	1.4	8.0	3.7	12,306
Saffron Hybrid <sup>1</sup> .....	7.8	5.2	1.4	7.2	2.9	9,398
Sunex 7017 <sup>1</sup> .....	6.7	6.2	1.9	10.0	3.3	22,334
Super 45 <sup>1</sup> .....	6.4	5.8	1.7	11.9	3.7	28,637
Topflight <sup>3</sup> .....	5.7	5.0	1.6	10.8	2.9	23,930
XPH 5361 (Cameo) <sup>2</sup> .....	6.3	5.7	1.5	7.7	3.6	19,034
XPH 5362 <sup>3</sup> .....	7.2	6.5	2.0	9.0	3.5	20,341
XPH 5363 <sup>1</sup> .....					2.3	12,342
XPH 5364 <sup>1</sup> .....					2.6	20,828

<sup>1</sup>Data for 1 year.<sup>2</sup>Data for 3 years.<sup>3</sup>Data for 2 years.

Information contained herein is available to all persons regardless of race, color, sex, or national origin.