

# Vegetable and Fruit

## Variety Trials

### Spring 2012

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# Tips to Interpret Results on Vegetable Variety Performance

Edgar Vinson and Joe Kemble

**Introduction:** The information provided by this report must be studied carefully in order to make the best selections possible. Although yield is a good indicator of varietal performance, other information must be studied. The following information provides a few tips to adequately interpret results in this report.

## *Open-Pollinated or Hybrid Varieties*

In general, hybrid varieties (also referred to as F1 varieties) are earlier and produce a more uniform crop. They have improved disease and pest or virus tolerance/resistance. F1 varieties are often more expensive than open-pollinated varieties (also referred to as OP varieties), and seeds cannot be collected from one crop in order to plant the next. Despite the advantages F1 varieties 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 between 100 to 500 square feet. Yields per acre are estimated by multiplying plot yields by corrective factors ranging from 100 to 1,000. Small errors are thus amplified, and estimated yields per acre may not be realistic. Therefore, locations cannot be compared simply by looking at the range of yields actually reported. However, the relative differences in performance among varieties are realistic, and can be used to identify best-performing varieties.

## *Statistical Interpretation*

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

$R^2$  ranges between 0 and 1. Values close to 1 suggest that the test was conducted under good conditions and that most of the variability observed was mainly due to the effect of variety and replication. Random, uncontrolled errors were of lesser importance. CV is an expression of yield variability relative to yield mean. Low CVs are desirable (under 20 percent) 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 Honeydew melon trial presented in this issue, conducted at the E.V. Smith Research Center, ‘Dream Dew’ yielded 45,021 pounds per acre, while ‘Summer Dew 252HQ’ and ‘Honey Orange’ yielded 39,559 and 30,578 pounds per acre, respectively. Since there was less than a 11,963 pound difference between ‘Summer Dew 252HQ’ and ‘Honey Orange,’ there is no statistical difference between these two varieties. However, the yield difference between ‘Dream Dew’ and ‘Honey Orange’ was 14,443 pounds, indicating that there is a real difference between these two varieties. From a practical point of view, producers should place the most importance on LSD values when interpreting results.

### *Testing Condition*

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

### *Ratings of Trials*

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

### *Where to Get Seeds*

Because seeds are alive, their performance and germination rates 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 the Appendix.

Several factors other than yield have to be considered when choosing a variety from a variety trial report. The main factors to consider 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 and Fruit Variety Trials* on the Web – to view this and other publications online go to:

[www.aaes.auburn.edu/comm/pubs/pubs-by-type/rebullist.php](http://www.aaes.auburn.edu/comm/pubs/pubs-by-type/rebullist.php)

**Table 1**  
*Soil Types at the Location of the Trial*

Location	Water holding capacity (In.)	Soil type
Gulf Coast Research and Extension Center (Fairhope)	0.09-0.19	Malbis fine sandy loam
Brewton Experiment 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 and Extension (Camden)	0.13-0.15	Forkland fine sandy loam
EV Smith Research Center, Horticultural Unit (Shorter)	0.15-0.17	Norfolk-orangeburg loamy sand
Chilton Area Horticultural Substation (Clanton)	0.13-0.15	Luvernue sandy loam
Upper Coastal Plain Research and Extension Center (Winfield)	0.13-0.20	Savannah loam
North Alabama Horticultural Substation (Cullman)	0.16-0.20	Hartsells-Albertville fine sandy loam
Sand Mountain Research and Extension Center (Crossville)	0.16-0.18	Wynnvilleville 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

# No Differences Found in Fruit Number Among Honey Dew Varieties

Joe Kemble, Edgar Vinson and Jason Burkett

A Honeydew melon trial was conducted at the E.V. Smith Research Center (EVSRC) in Shorter, Alabama (Tables 3.1 and 3.2). Soils were fertilized according to the recommendations of the Auburn University Soil Testing Laboratory. For current recommendations for pest and weed control in vegetable production in Alabama, consult the latest edition of the Southeastern U.S. Vegetable Crop Handbook ([www.thegrower.com/south-east-vegetable-guide](http://www.thegrower.com/south-east-vegetable-guide)). For a copy of the handbook and for further information, consult your local county extension agent. Your agent can be found by visiting: [www.aces.edu/counties](http://www.aces.edu/counties).

Melon varieties were direct-seeded May 30 onto 30-foot rows with 6 feet between rows and a within-row spacing of 2 feet. Drip irrigation and black plastic mulch were used. Melons were harvested four times from July 11 through July 27. Melons were harvested after hair-like structures fell off the rind (Table 3.3).

The variety 'Crème De Menthe' was the market standard of this trial. In total marketable category 'Crème De Menthe' performed as well as, or better than, all varieties (Table 3.3). 'ACX 145HD XOF' was the only entry to produce yields significantly lower than 'Crème De Menthe.' In total marketable fruit number, there were no differences found. 'Summer Dew 3000 OF' produced the most fruit per acre. Yield was comparatively low for this variety as it produced fruit with the smallest individual weight.



**Table 3.1**

*Ratings of 2012 Honey Dew Melon Variety Trial*

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

Note: See introduction for description of ratings scales

**Table 3.2**

*Seed Source, Fruit Characteristics and Relative Earliness of Selected Varieties of Honey Dew Melon*

Variety	Type	Seed source	Rind aspect	Flesh color	Days to harvest	Disease claims
ACX 145HD XOF	F1	Abbott & Cobb	Smooth	Orange	--	FW <sup>abc</sup> , PM <sup>bc</sup>
Crème De Menthe	F1	Sieger	Smooth	Green	82	FW, PM
Dream Dew	F1	Harris	Smooth	Green/White	82	FW, PM
Earli Dew	F1	Johnny's Select	Smooth	Green	80	FW, PM
Honey Ace	F1	Territorial Seeds	Smooth	Green	80	FW <sup>c</sup>
Honey Orange	F1	Johnny's Select	Smooth	Orange	74	FW, PM
Honey Pearl	F1	Johnny's Select	Smooth	Green/White	74	--
Summer Dew 252HQ	F1	Abbott & Cobb	Smooth	Green/White	--	--
Summer Dew 262HQ	F1	Abbott & Cobb	Smooth	Green	--	FW
Summer Dew 3000 OF	F1	Abbott & Cobb	Smooth	Orange	--	--

a. Race 0;  
b. Race 1;  
c. Race 2;  
d. Race 3

Note: For type: F1 = Hybrid; FW = Fusarium; Wilt; O= Orange; R=Red; Y = Yellow. For aspect: E= Eastern; Disease Claims: FW = Fusarium Wilt; PM = Powdery Mildew

# HONEY DEW

**Table 3.3**

*Yield and Quality of Selected Honey Dew Melon Varieties*

Variety	Total marketable yield (lbs/ac)	Total marketable number (#/ac)	Cull (lbs/ac)	Individual fruit weight (lbs)
Dream Dew	45,021	5,990	6,349	7.56
Summer Dew 252HQ	39,559	6,534	3,594	6.11
Summer Dew 262HQ	36,600	7,169	3,115	5.03
Honey Ace	35,242	5,990	4,171	5.85
Crème De Menthe	34,875	6,171	2,036	5.60
Honey Orange	30,578	6,262	2,556	4.91
Earli Dew	28,752	6,353	9,467	4.59
Honey Pearl	28,542	6,988	3,472	4.17
Summer Dew 3000 OF	27,234	8,077	1,571	3.43
ACX 145HD XOF	22,750	6,080	4,698	3.72
$r^w$	0.50	0.26	0.50	0.80
CV	25	23	79	14
LSD ( $\alpha = 0.05$ )	11,963	4,914	5,117	0.48

## **Several Top Performing Yellow Summer Squash Varieties in Brewton**

**Joe Kemble, Edgar Vinson and Randy Akridge**

A summer squash variety trial was conducted at the Brewton Area Research Unit (BARU) in Brewton, Alabama (Tables 4.1 and 4.2). Beds were formed and plastic mulch and drip irrigation were used. Squash varieties were direct seeded on white plastic mulch on March 20. Beds were 20 feet long on 6-foot centers. Spacing within each row was 1.5 feet.

Soils were fertilized according to the recommendations of the Auburn University Soil Testing Laboratory. For current recommendations for pest and weed control in vegetable production in Alabama, consult the latest edition of the Southeastern U.S. Vegetable Crop Handbook ([www.thegrower.com/south-east-vegetable-guide](http://www.thegrower.com/south-east-vegetable-guide)). For a copy of the handbook and for further information, consult your local county extension agent. Your agent can be found by visiting: [www.aces.edu/counties](http://www.aces.edu/counties).

Squash were harvested seven times between May 23 and June 18. Squash were graded according to the United States Department of Agriculture (USDA) Standards for Grades of Summer Squash (Table 4.3).

All Varieties produced significantly higher yields than the market standard 'Prelude II.' 'Multipik' and 'Super Pik,' along with 'Gentry,' produced among the highest early and total yields (Tables 4.3 and 4.4). Early yield consisted of the first three harvests. 'Solstice' topped the list in early marketable yield, but was not among the top producers overall. 'Super Pik' produced a higher yield of U.S. No. 1 fruit early in the season. This yield was similar to several other varieties. In total U.S. No.1 production, 'Super Pik' again topped the list. Only varieties 'Gentry' and 'Multipik' produced U.S. No. 1 yields similar to 'Super Pik,' overall.

# SUMMER SQUASH

**Table 4.1**

*Ratings of 2012 Yellow Summer Squash Variety Trial*

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

*Note:* See introduction for description of ratings scales

**Table 4.2**

*Seed Source, Fruit Type and Relative Earliness of Selected Yellow Summer Squash Varieties*

Variety	Type	Seed source	Days to harvest	Disease claims	Years evaluated
Cosmos	F1	Abbott & Cobb	60	PRSV, WMV, ZYMV	12
Gentry	F1	Siegers	43	--	97-99, 02-08, 10-12
Lazor	F1	Seedway	42	ZYMV	11,12
Lioness	F1	Harris Seeds	50	CMV, PRSV, WMV II, ZYMV,	04-08, 11, 12
Multipik	F1	Harris Seeds	50	CMV, WMV	11, 12
Ocelot	F1	Harris Moran	--	--	11, 12
Precious II <sup>a</sup>	F1	Abbott & Cobb	--	--	02, 03, 12
Prelude II	F1	Seminis	40	PM, WMV, ZYMV	97-01, 03-06, 12
Solstice	F1	Abbot & Cobb	--	WMV, ZYMV	12
Sunray <sup>a</sup>	F1	Seminis	43	--	99, 03, 04, 07, 08, 11, 12
Superpik <sup>a</sup>	F1	Harris	50	CMV, WMV	12
Supersette <sup>a</sup>	F1	Harris Moran	--	CMV, WMV	94, 96, 03, 12

a. Precocious Variety: Has ability to mask blemishes caused by some viruses = none; from seed catalogues

*Note:* Disease claims: CMV = Cucumber Mosaic Virus; PM = Powdery Mildew; PRSV = Papaya Ring Spot; ZYMV = Zucchini Yellow Mosaic Virus ; WMV = Watermelon Mosaic Virus

# SUMMER SQUASH

**Table 4.3**

*Early Yield and Quality of Selected Summer Squash Varieties*

Variety	Early marketable yield (lbs/ac)	Early U.S. #1 weight (lbs/ac)	Early U.S. #2 weight (lbs/ac)	Early U.S. #1 number (#/ac)	Early U.S. #2 number (#/ac)
Solstice	8,989	5,700	3,290	21,968	5,546
Super Pik	8,934	6,013	2,921	13,159	5,329
Superset	7,782	4,908	2,874	18,596	5,764
Cosmos	7,763	4,899	2,863	15,878	4,568
Multipik	7,416	4,611	2,805	16,639	5,220
Gentry	7,082	4,566	2,515	20,336	5,438
Lioness	6,380	4,151	2,229	13,268	3,263
Ocelot	5,951	3,611	2,340	15,660	4,568
Sunray	5,941	2,826	3,115	10,223	6,199
Lazor	5,675	3,331	2,344	11,419	3,698
Precious	5,662	3,621	2,040	11,854	3,263
Prelude II	3,065	1,610	1,455	6,090	2,610
R <sup>2</sup>	0.63	0.60	0.40	0.80	0.60
CV	19	27	26	16	26
LSD ( $\alpha = 0.05$ )	1,922	1,687	1,001	3,546	1,803

**Table 4.4**

*Total Yield and Quality of Selected Summer Squash Varieties*

Variety	Early marketable yield (lbs/ac)	Early U.S. #1 weight (lbs/ac)	Early U.S. #2 weight (lbs/ac)	Early U.S. #1 number (#/ac)	Early U.S. #2 number (#/ac)
Super Pik	15,644	11,019	4,625	28,601	8,591
Multipik	14,022	9,372	4,650	31,538	8,700
Gentry	13,619	9,533	4,086	37,845	8,591
Superset	12,996	8,862	4,134	34,039	8,265
Solstice	12,626	8,725	3,901	31,429	6,743
Sunray	12,133	7,614	4,520	25,665	8,918
Lazor	11,604	7,173	4,431	22,924	7,069
Ocelot	11,578	7,855	3,723	31,864	7,395
Cosmos	10,842	7,188	3,654	23,273	5,873
Lioness	10,379	6,572	3,807	20,554	5,981
Precious	9,932	6,288	3,644	19,140	6,525
Prelude II	6,499	2,568	2,699	9,715	5,003
R <sup>2</sup>	0.80	0.72	0.40	0.80	0.60
CV	12	18	27	16	25
LSD ( $\alpha = 0.05$ )	2,115	2,059	1,597	6,237	2,718

## Zucchini Market Standard Shows Strong Performance Throughout the Season

Joe Kemble, Edgar Vinson and Jason Burkett

A zucchini squash variety trial was conducted at the E.V. Smith Research Center (EVSRC) in Shorter, Alabama (Tables 5.1 and 5.2).

Beds were formed, and plastic mulch and drip irrigation were used. Zucchini varieties were direct-seeded on white plastic mulch on April 25. Beds were 20 feet long on 6-foot centers. Spacing within each row was 1.5 feet.

Soils were fertilized according to the recommendations of the Auburn University Soil Testing Laboratory. For current recommendations for pest and weed control in vegetable production in Alabama, consult the latest edition of the Southeastern U.S. Vegetable Crop Handbook ([www.thegrower.com/south-east-vegetable-guide](http://www.thegrower.com/south-east-vegetable-guide)). For a copy of the handbook and for further information, consult your local county extension agent. Your agent can be found by visiting: [www.aces.edu/counties](http://www.aces.edu/counties).

Zucchini were harvested eight times between May 29 and June 15. Squash were graded according to the United States Department of Agriculture (USDA) Standards for Grades of Summer Squash (Tables 5.3 and 5.4). Grades were combined and categorized as marketable or non-marketable.

Most varieties with the exception of Spineless Perfection produced statistically higher early yields than the market standard 'Spineless Beauty' (Table 5.3). Early yield consisted of the first three harvests. For the second season, 'Zucchini Elite,' another market standard, produced the highest yield. However, yield of 'Zucchini Elite' was statistically higher than 'Elegance,' 'Spineless Perfection' and 'Spineless Beauty' only. In total yield, 'Zucchini Elite' produced among the highest yields of all varieties (Table 5.4). 'Leopard,' 'Reward' and 'Elegance' produced both early and total yields similar to 'Zucchini Elite.'

**Table 5.1**

*Ratings of 2012 Zucchini Squash Variety Trial*

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

*Note: See introduction for description of ratings scales*

**Table 5.2**

*Seed Source, Fruit Type and Relative Earliness of Selected Zucchini Squash Varieties*

Variety	Type	Seed source	Days to harvest	Disease claims	Years evaluated
Bonus	F1	Abbot & Cobb	--	PRSV, WMV, ZYMV	12
Reward	F1	Harris	49	PM, CMV, WMV, ZYMV	12
Leopard	F1	Harris Moran	--	PRSV, ZYMV	11, 12
Spineless Perfection (RSQ 5184)	F1	Harris	44	PM, MWV, ZYMV	10, 11
Spineless Beauty	F1	Harris	43	--	95-97, 99, 10, 11, 12
Symphony	F1	Abbott & Cobb	53	WMV, ZYMV	12
Zucchini Elite	F1	Harris Moran	--	--	95-97, 11, 12
Elegance	F1	Harris Moran	--	PM, WMV, ZYMV	10-12

a. Precocious Variety: Has ability to mask blemishes caused by some viruses = none; from seed catalogues

*Note:* Disease claims: CMV = Cucumber Mosaic Virus; PM = Powdery Mildew; PRSV = Papaya Ring Spot; ZYMV = Zucchini Yellow Mosaic Virus ; WMV = Watermelon Mosaic Virus

# ZUCCHINI

**Table 5.3**

*Early Yield and Quality of Selected Zucchini Squash Varieties*

Variety	Total marketable yield (lbs/ac)	Total marketable number (#/ac)	Cull (lbs/ac)	Individual fruit weight (lbs)
Zucchini Elite	4,411	7,169	3,782	0.60
Leopard	4,013	6,806	2,332	0.61
Bonus	3,550	6,171	2,623	0.58
Reward	3,268	7,260	1,078	0.45
Symphony	3,234	5,264	2,088	0.58
Elegance	2,885	5,717	1,853	0.60
Spineless Perfection	1,240	2,178	2,108	0.57
Spineless Beauty	576	1,089	3,180	0.59
R <sup>2</sup>	0.72	0.65	--	0.44
CV	37	40	--	21
LSD ( $\alpha = 0.05$ )	1,196	7,163	--	0.04

**Table 5.4**

*Total Yield and Quality of Selected Zucchini Squash Varieties*

Variety	Total marketable yield (lbs/ac)	Total marketable number (#/ac)	Cull (lbs/ac)	Individual fruit weight (lbs)
Leopard	12,964	20,237	7,341	0.63
Reward	12,386	24,503	3,342	0.50
Zucchini Elite	10,117	17,424	7,480	0.58
Elegance	9,314	20,419	15,653	0.46
Symphony	8,315	14,520	4,303	0.56
Bonus	8,192	15,428	6,539	0.53
Spineless Perfection	7,090	12,433	5,351	0.58
Spineless Beauty	4,521	8,984	7,635	0.51
R <sup>2</sup>	0.62	0.70	--	0.46
CV	27	25	--	13
LSD ( $\alpha = 0.05$ )	3,678	13,625	--	0.05



## **Two Recently-Named Bell Pepper Selections Top Market Standard**

**Joe Kemble, Edgar Vinson, and Randy Akridge**

A spring bell pepper variety trial was conducted at the Brewton Agricultural Research Unit (BARU) in Brewton, Alabama. Five-week-old bell pepper transplants were set onto 20-foot long plots at a within-row spacing of 1.5 feet on May 4. White plastic mulch and drip irrigation were used.

Soils were fertilized according to the recommendations of the Auburn University Soil Testing Laboratory. For current recommendations for pest and weed control in vegetable production in Alabama, consult the latest edition of the Southeastern U.S. Vegetable Crop Handbook ([www.thegrower.com/south-east-vegetable-guide](http://www.thegrower.com/south-east-vegetable-guide)). For a copy of the handbook and for further information, consult your local county extension agent. Your agent can be found by visiting: [www.aces.edu/counties](http://www.aces.edu/counties).

Bell peppers were harvested, weighed and graded four times between June 25 and July 18. Grades of fresh market bell pepper were adapted from the United States Department of Agriculture (USDA) Grader's Guide. Marketable yield was the sum of Fancy, No.1 and No.2 grades (Table 6.3).

In total yield, two recently named varieties, 'Blitz' and 'Gridiron,' produced yields that were higher than the market standard Camelot 'X3R.' Other varieties that performed better than the market standard are 'Double Up,' 'Declaration,' 'Wizard X3R' and 'Touchdown,' as well as 'FPP9048,' an experimental variety.

Total yield produced by 'Declaration' (Table 6.3) was statistically similar to all other varieties. Declaration also produced U.S. Fancy yield that was statistically higher than all other varieties with the exception of 'Revolution.' Additionally, 'Gridiron,' 'Touchdown,' 'Blitz' and 'Vanguard' produced higher U.S. Fancy yield than the market standard. 'Declaration' produced statistically larger fruit than all other varieties with the exception of 'Revolution.'

# BELL PEPPER

**Table 6.1**

*Ratings of 2012 Bell Pepper Variety Trial*

Location	BARU
Fertility	5
Irrigation	5
Pests	5
Overall	5

*Note: See introduction for description of ratings scales*

**Table 6.2**

*Seed Source, Fruit Characteristics and Relative Earliness of Selected Bell Pepper Varieties*

Variety	Type	Seed source	Fruit color	Days to harvest	Disease claims <sup>a</sup>	Years evaluated
Allegiance	F1	Harris Moran	G-R	61	BSp 1-5, PVY 0, TbMV	11, 12
Camelot X3R	F1	Seminis	G-R	74	TbMV	94-97, 99, 01, 10-12
Declaration	F1	Harris Moran	G-R	75	CMV, PRR, TSWV, BSp 1-3, 5	10-12
Double Up	F1	Sakata	G-R	--	BSp 0-3, 5, 7, 8, TMV 0	12
FFPP9048	F1	Sakata	G	--	--	12
Gridiron (FFPP9048)	F1	Sakata	G-R	--	BSp 0-5, 7-9, TEV, TMV	12
Revolution	F1	Harris Moran	G-R	--	BSp 1-3, 5, CMV, PRR	12
Stiletto	F1	Siegers	G-R	70	BSp 1-3, TSWV	10-12
Touchdown	F1	Sakata	G-R	--	BSp 0-5, 7-9, TMV	12
Vanguard	F1	Harris Moran	G-R	--	BSp 1-5, CMV, PRR	10-12
Wizard X3R	F1	Seminis	G-R	74	BSp 1-3, TMV	01, 11, 12
Blitz (XPP7039)	F1	Sakata	G-R	--	BSp 0-5, 7-9, TEV, TMV	12

a. Numbers that follow abbreviations indicate race of disease. For example, BSp 1-5 indicates that a cultivar is resistant/tolerant to bacterial spot races 1 through 5; "--" = not available from seed catalogues; Type: F1 = Hybrid; BSp = Bacterial Spot; CMV = Cucumber Mosaic Virus  
*Note:* PRR = Phytophthora Root Rot; PVY = Potato Virus Y; Stip = Stip or Pepper spot; TbMV = Tobamo Virus; TEV = Tabacco Etch Virus; TMV = Tobacco Mosaic Virus; TSWV = Tomato Spotted Wilt Virus; G=Green; G-R = Green to Red; G-Y = Green to Yellow

**Table 6.3**  
Yield and Quality of Selected Bell Pepper Varieties

Variety	Total marketable yield (lbs/ac)	Total marketable number (#/ac)	Total marketable number (#/ac)	Fancy weight (lbs/ac)	Fancy number (#/ac)	U.S. #1 weight (lbs/ac)	U.S. #1 number (#/ac)	U.S. #2 weight (lbs/ac)	U.S. #2 fruit weight (lbs)	Individual cull (lbs/ac)
Double Up	11,694	44,377	3,539	1,459	22,506	6,557	18,332	3,678	0.26	1,106
Declaration	11,645	33,215	13,431	6,019	13,068	3,972	6,716	1,654	0.35	1,495
Wizard X3R	11,478	43,742	3,721	1,604	23,141	6,629	16,880	3,245	0.26	1,021
FPP1814	11,294	41,654	2,178	909	24,866	7,275	14,611	3,110	0.27	1,116
Touch Down	11,088	36,935	7,714	3,208	19,965	6,019	9,257	1,861	0.30	1,007
XPP7039	11,003	38,478	5,445	2,297	20,328	6,459	12,705	2,247	0.29	1,084
FPP9048	10,807	34,667	8,077	3,458	17,606	5,385	8,984	1,964	0.31	1,302
Revolution	10,591	32,216	10,255	4,455	15,428	4,571	6,534	1,565	0.33	1,851
Stiletto	10,168	51,274	1,643	756	18,422	4,453	31,218	4,959	0.20	1,758
Vanguard	9,336	33,578	5,990	2,596	15,065	4,093	12,524	2,647	0.28	2,169
Camelot	8,373	34,213	1,634	651	16,517	4,439	16,063	3,282	0.25	2,683
Allegiance	5,901	22,869	1,331	571	10,255	3,120	11,616	2,353	0.26	3,110
R <sup>2</sup>	0.65	0.65	0.81	0.82	0.60	0.60	0.82	0.70	0.90	0.80
CV	16	17	39	38	26	24	27	29	6	28
LSD ( $\alpha = 0.05$ )	2,417	9,120	3,149	1,330	6,815	1,813	5,405	1,158	0.025	152

## Few Differences Found in 2012 Among Tomato Varieties

Joe Kemble, Edgar Vinson and Randy Akridge

Spring tomato variety trials were conducted at the Brewton Agricultural Research Unit (BARU) in Brewton, Alabama (Tables 7.1 and 7.2). Five-week-old tomato transplants were set on May 4 onto 20-foot long plots and a within-row spacing of 1.5 feet. White plastic mulch and drip irrigation were used at both locations.

Soils were fertilized according to the recommendations of the Auburn University Soil Testing Laboratory and pesticides were applied. For current recommendations for pest and weed control in vegetable production in Alabama, consult the latest edition of the Southeastern U.S. Vegetable Crop Handbook ([www.thegrower.com/south-east-vegetable-guide](http://www.thegrower.com/south-east-vegetable-guide)). For a copy of the handbook and for further information, consult your local county extension agent. Your agent can be found by visiting: [www.aces.edu/counties](http://www.aces.edu/counties).

Tomatoes were harvested, weighed and graded four times between July 9 and July 30. Grades and corresponding fruit diameters (D) of fresh market tomato were adapted from the United States Department of Agriculture (USDA) standards and were extra-large (D>2.9 inch), large (D>2.5 inch) and medium (D>2.3 inch). Marketable yield was the sum of extra-large, large and medium grades (Table 7.3).

There were few differences found in total marketable yield. In this year's trial, 'BHN 640' was used as the market standard. With the exception of 'Sunguard' and 'Tribute,' all varieties performed as well as 'BHN 640.' In extra-large production, all varieties performed statistically as well as, or better than, the market standard. 'Trinity' and 'BHN 602' were the only varieties to produce statistically higher extra-large yields than the market standard. 'Tribute' and 'Charger' produced the highest amount of cull fruit. Their yields in this category were statistically higher than all other varieties. Varieties producing the least amount of cull fruit were 'Amelia,' 'Sunguard,' 'Trinity,' 'XTM 7262' and 'Red Defender.'

**Table 7.1**

*Ratings of 2012 Tomato Variety Trial*

Location	BARU
Fertility	5
Irrigation	5
Pests	5
Overall	5

Note: See introduction for description of ratings scales

**Table 7.2**

*Seed Source, Fruit Characteristics and Relative Earliness of Selected Tomato Varieties*

Variety	Type	Seed source	Plant habit	Fruit color	Days to harvest	Disease claims <sup>a</sup>	Years evaluated
Amelia	F1/FM	Harris Moran	Det	Red	80	FW 1-3, TSWV, VW	03-08, 10-12
Bella Rosa	F1/FM	Sakata	Det	Red	74	FW 1-3, TSWV, VW	07-08, 10-12
BHN 602	F1/FM	BHN	Det	Red	75	FW 1-3, TSWV, VW	10-12
BHN 640	F1/FM	BHN	Det	Red	75	FW 1-3, TSWV, VW	03-12
Charger	F1/FM	Sakata	Det	Red	--	ASC, FW 1-3, St, VW 1, TY	12
Crista	F1/FM	Harris Moran	Det	Red	74	FW 1-3, NE, TSWV, VW	06-12
HM 8849	F1/FM	Harris Moran	Det	Red	--	FW 1-2, FC, FR, St	12
Primo Red	F1/FM	Harris Moran	Det	Red	68	FW 1-2, ToMV, TSWV, VW	10-12
Red Defender	F1/FM	Harris	Det	Red	75	ASC, FW 1-2, St, TSWV, VW	07, 11, 12
Sunguard	F1/FM	Seminis	Det	Red	75	ASC, FW 1-3, St, VW 1	11, 12
Tribeca	F1/FM	Vilmorin	Det	Red	--	FW 1-3, St, VW 1	11, 12
Tribute	F1/FM	Sakata	Det	Red	--	--	10-12
Trinity	F1/FM	Harris Moran	Det	Red	--	FW 1-2, Nt, TSWV, VW 1	10-12
XTM 7262	F1/FM	Sakata	Det	Red	--	--	12

a. Numbers that follow abbreviations indicate race of disease. For example, BSp 1-5 indicates that a cultivar is resistant/tolerant to bacterial spot races 1 through 5; "--" = not available from seed catalogues; Type: F1 = Hybrid; BSp = Bacterial Spot; CMV = Cucumber Mosaic Virus

Note: PRR = Phytophthora Root Rot; PVY = Potato Virus Y; Stip = Stip or Pepper spot; TbmV = Tobamo Virus; TEV = Tobacco Etch Virus; TMV = Tobacco Mosaic Virus; TSWV = Tomato Spotted Wilt Virus; G=Green; G-R = Green to Red; G-Y = Green to Yellow

**Table 7.3**  
Yield and Quality of Selected Tomato Varieties

Variety	Total marketable yield (lbs/ac)	Total marketable cull (boxes/ac)	Total marketable number (#/ac)	Extra large weight (lbs/ac)	Extra large number (#/ac)	Large weight (lbs/ac)	Number (#/ac)	Large weight (lbs/ac)	Medium number (#/ac)	Medium weight (lbs)	Individual fruit weight (lbs/ac)
Red Defender	26,722	432	61,952	10,802	17,303	9,052	21,296	6,868	23,353	0.43	6,695
BHN 640	24,964	377	55,902	9,431	15,065	9,728	22,506	5,804	18,332	0.45	11,429
Trinity	24,613	527	50,336	13,164	20,328	7,229	16,214	4,220	13,794	0.49	8,495
BHN 602	24,275	508	52,393	12,697	20,933	7,622	18,150	3,957	13,310	0.46	11,191
Bella Rosa	23,411	492	72,721	12,291	19,602	7,072	39,809	4,047	13,310	0.39	9,767
Tribeca	22,787	370	50,215	9,249	14,641	8,682	19,602	4,856	15,972	0.45	9,138
Charger	22,112	500	42,955	12,504	18,513	6,685	15,004	2,922	9,438	0.51	14,814
Amelia	21,958	363	49,126	9,079	15,004	7,789	17,545	5,090	16,577	0.45	8,977
HM 8849	21,658	360	47,674	9,002	14,641	8,021	17,908	4,634	15,125	0.45	10,192
Primo Red	20,989	436	40,898	10,906	16,093	7,197	15,730	2,886	9,075	0.51	11,167
XTM 7262	20,093	435	43,318	10,869	118,392	5,279	11,979	3,945	12,947	0.47	6,967
Crista	19,482	303	43,076	7,585	11,979	7,421	16,456	4,476	14,641	0.45	10,053
Sunguard	17,177	203	40,172	5,071	8,107	7,448	16,819	4,659	15,246	0.43	8,871
Tribute	16,896	250	39,446	6,262	10,285	6,694	15,609	3,941	13,552	0.43	15,188
R <sup>2</sup>	0.50	0.68	0.40	0.70	0.60	0.50	0.40	0.60	0.62	0.40	0.80
CV	17	21	30	21	25	22	66	25	25	10	16
LSD ( $\alpha = 0.05$ )	5,499	122	22,011	3,077	5,748	2,400	18,191	1,622	5,275	0.06	2,390

## **Summer Flavor Series Represented in Watermelon Trial**

**Joe Kemble, Edgar Vinson and Jason Burkett**

A seeded watermelon trial was conducted at the E.V. Smith Research Center in Shorter, Alabama. Ten seeded watermelon varieties were direct-seeded on May 30. Transplants were spaced 10 feet between rows and 5 feet within each row. Black plastic mulch and drip irrigation were used.

Soils were fertilized according to the recommendations of the Auburn University Soil Testing Laboratory. For current recommendations for pest and weed control in vegetable production in Alabama, consult the latest edition of the Southeastern U.S. Vegetable Crop Handbook ([www.thegrower.com/south-east-vegetable-guide](http://www.thegrower.com/south-east-vegetable-guide)). For a copy of the handbook and for further information, consult your local county extension agent. Your agent can be found by visiting: [www.aces.edu/counties](http://www.aces.edu/counties).

Watermelons were harvested on August 1, 7 and 14, and were graded according to the Watermelon Grader's Guide (Alabama Cooperative Extension System) to determine marketable yield (Table 8.3). Representative watermelon samples were collected for each variety and were used to measure soluble solids (sweetness). These samples were not replicated. A hand-held digital refractometer was used to measure soluble solids. Watermelons with a reading below 10 are not considered sweet.

Several entries from the Summer Flavor series were included in this year's trial. 'Summer Flavor 710' topped the list in total marketable yield. The variety produced significantly higher yields than two other entries in the series, 'Summer Flavor 880' and 'Summer Flavor 920.' Total marketable yield of 'Summer Flavor 710' was statistically similar to 'Summer Flavor 860.' 'Summer Flavor 710' is the only entry in the trial that has a jubilee type rind pattern. All other varieties are all sweet types and they performed as well as the market standard 'Stargazer.' 'Summer Flavor 710' produced the largest fruit. Weight of individual fruit for 'Summer Flavor 710' was statistically similar to 'Summer Flavor 880.' There were no statistical differences found among varieties in the Total Marketable Number category.

# WATERMELON

**Table 8.1**

*Ratings of 2012 Seeded and Seedless Watermelon Variety Trial*

Location	BARU
Fertility	5
Irrigation	5
Pests	5
Overall	5

*Note: See introduction for description of ratings scales*

**Table 8.2**

*Seed Source, Fruit Characteristics and Relative Earliness of Selected Seeded and Seedless Watermelon Varieties*

Variety	Type	Seed source	Fruit shape	Flesh color	Days to harvest	Disease claims <sup>a</sup>	Years evaluated
Allsweet	OP, AS	Sieger	Elongated	Red	90	<sup>bd</sup> Ant, FW	12
Duration	F1, AS	Sieger	Elongated	Red	80	Ant, FW	11,12
Estrella	F1, AS	Seedway	Oblong	Red	84	Ant, FW	12
Mardi Gras	F1, AS	Sieger	Elongated	Red	88	Ant, FW	97,99,12
Stargazer	F1, AS	Sieger	Elongated	Red	85	Ant, FW	98-01,03,12
Summer Flavor 710	F1, JU	Twilley	Oblong	Red	85	<sup>b</sup> Ant, <sup>b</sup> FW	02,12
Summer Flavor 860	F1, AS	Abbott & Cobb	Oblong	Red	--	--	12
Summer Flavor 880	F1, AS	Abbott & Cobb	Elongated	Red	--	--	12
Summer Flavor 920	F1, AS	Abbott & Cobb	Elongated	Red	--	--	12
Tropical	F1, AS	Harris Moran	Elongated	Red	--	<sup>b</sup> Ant, <sup>ab</sup> FW	11,12

a. Race 0; b. Race 1; c. Race 2; d. Race 3; Type: F1 = Hybrid; BSp = Bacterial Spot; CMV = Cucumber Mosaic Virus

*Note: PRR = Phytophthora Root Rot; PVY = Potato Virus Y; Slip = Slip or Pepper spot; TbMV = Tobamo Virus; TEV= Tabacco Etch Virus; TMV=Tobacco Mosaic Virus; TSWV = Tomato Spotted Wilt Virus; G=Green; G-R = Green to Red; G-Y = Green to Yellow*



# WATERMELON

**Table 8.3**

*Yield and Quality of Selected Seeded Watermelon Varieties*

Variety	Total marketable yield (lbs/ac)	Total marketable number (#/ac)	Cull (lbs/ac)	Individual fruit weight (lbs)	Soluble solids (%)
Summer Flavor 710	53,087	1,997	1,398	26.63	11.9
Estrella	49,214	2,541	1,198	19.73	12.1
Allsweet	44,003	2,087	1,198	21.44	11.3
Stargazer	43,224	2,360	1,863	18.26	10.0
Summer Flavor 860	42,585	1,906	799	21.37	8.0
Mardi Gras	39,171	1,997	1,065	21.13	10.1
Tropical	36,696	1,815	1,065	20.08	11.2
Summer Flavor 880	29,967	1,271	1,597	24.95	10.3
Summer Flavor 920	23,239	1,452	1,597	16.01	12.0
Duration	21,562	1,089	1,198	19.84	11.9
R <sup>2</sup>	0.50	0.53	0.30	0.40	--
CV	38	37	57	18	--
LSD ( $\alpha = 0.05$ )	22,423	2,297	1,126	2.61	--

## Seed Sources

### Supporting Seed Companies

**Abbott and Cobb, Inc.**

Russ Beckham  
146 Old US Highway 84W  
Boston, GA 31626  
(229) 498-2366  
rbeckham@rose.net

**Harris Moran Seed Co.**

Michael Hannah  
P.O. Box 4938  
Modesto, CA 95352  
(828) 421-6618  
Fax: (828) 246-0925  
m.hannah@hmclause.com

**Sakata Seed America**

Jay Jones  
P.O. Box 880  
Morgan Hills, CA 95038  
(239) 289-2130  
jayjones@sakata.com

### Other Seed Sources

**BHN**

1310 McGee Avenue  
Berkeley, CA 94703  
(510) 526-4704  
mail@berkeleyhort.com

**Johnny's Select Seeds**

955 Benton Ave  
Winslow, ME 04901  
(207) 861-3900  
info@johnnyseeds.com

**Abbott and Cobb, Inc.**

Russ Beckham  
146 Old US Highway 84W  
Boston, GA 31626  
(229) 498-2366  
rbeckham@rose.net

**Seedway**

1225 Zeager Rd  
Elizabethtown, PA 17022  
(717) 367-1075  
info@seedway.com

**Seminis Vegetable Seeds**

2700 Camino Del Sol  
Oxnard, CA 93030  
(855) 733-3834  
seminis.deruiter  
@monsanto.com

**Siegers Seed Company**

13031 Reflections Drive  
Holland, MI 49424  
(616) 786-4999

**Territorial Seed Co.**

P.O. Box 158  
Cottage Grove, OR 97424  
(888) 657-3131  
info@territorialseeds.com

**Twilley Seed Co.**

121 Gary Road  
Hodges, SC 29653  
(800) 622-7333  
twilley@twilleyseed.com

**Vilmorin**

2551 North Dragoon, 131  
Tuscon, AZ 85745  
(520) 884-0011