

VERY EARLY TOMATO VARIETY TRIAL RESULTS - 2005

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INTRODUCTION

Early maturing, large fruited commercial varieties were evaluated for adaptation to early production under New Jersey growing conditions. Six varieties were included in a replicated trial conducted at Rutgers Agricultural Research and Extension Center, Bridgeton, N. J. This trial was conducted in the open and adjacent to a duplicate trial grown inside a high tunnel.

METHODS

Culture

Seeds were sown on March 22, in 72-cell (1 ½ x 1 ½) trays containing peat-vermiculite media formulated for tomato transplant production. Trays were thinned to one seed per cell on April 12th. Admire was drenched on the tomatoes at a rate of 1ml/300ml of water per flat on April 29th. Calcium Nitrate at the rate of 75 lbs N, per acre was broadcast and worked in before planting. Poast was applied for weed control. Black plastic mulch and drip irrigation tube were laid. On April 29th transplants were set 18" apart on beds with 42 inch centers. Starter solution 15-30-15 was used at planting. Plants were grown on four foot stakes. Mechanical pollinations were performed. After fruit set 40 lbs of N, P₂O₅ and K₂O/A from 20-20-20 and ½ lb/A boron from Solubor were injected into the irrigation system four times. Insects and fungicides were controlled as required using commercial recommendations for tomatoes.

Experimental, Harvesting and Evaluation

Plots were arranged in a randomized block design and replicated two times. Data were obtained on foliage and fruit characteristics for all of the varieties in the trial on August 1st. A hand harvest of each plot was made on July 5 when early fruits were ripening and on 7/7, 7/12, 7/15, 7/19, 7/22, 7/28, 8/2, 8/9, 8/16, 8/29 and 9/2. All fruits with pink to red maturity were harvested. Fruits were separated into usable, and culls. Major defects were identified and recorded. On August 1st, a sample of representative fruit from each plot was used to evaluate external and internal fruit characteristics using the rating system shown in the table below. Means were compared using the LSD and the HSD test at the 5% level.

Color	Shoulder Appearance	Fruit Firmness	Blossom Scar	White Tissue
5 = Excellent	5 = Excellent	5 = Firm	5 = Large	5 = None
4 = Very Good	4 = Very Good	4 = Medium Firm	4 = Medium – Large	4 = Slight – Some
3 = Good	3 = Good	3 = Firm	3 = Medium	3 = Moderate
2 = Fair	2 = Fair	2 = Medium Soft	2 = Small – Medium	2 = Moderate–Severe
1 = Poor	1 = Poor	1 = Soft	1 = Small	1 = Severe

RESULTS

Data on vine vigor and yield are summarized in Table 1. Indy had significantly more vigorous vines than Applause, Debut and Sunstart. Sunstart had lower vigor ratings than all other varieties in the trial.

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Sunstart had a higher early marketable yield than all other varieties. However there were no differences among varieties for total marketable yield. The percent marketable yield did not differ among the varieties; however there was a trend toward higher percent marketable with Applause compared to Debut and Sunbrite. There was a trend toward higher average fruit weight with Sunbrite (not statistically significant).

Table 1. Vine Vigor, Early and Total Marketable Yield, Very Early Variety Trial – 2005

Variety	Seed Source	Vine Vigor Rating ¹	Early Market ² Yield Boxes/A	Total Market Yield Boxes/A	% Total Market Yield	Average Ft. Wt. oz
Applause	Seminis	2	50	2832	72	8.4
Debut	Seminis	2	88	2316	51	8.2
Sunbrite	Seminis	2.5	16	2001	52	10.2
Sunshine	Seminis	2.5	77	2544	57	7.4
Sunstart	Seminis	1	202	2869	64	7.3
Indy	Rogers	3	20	2751	65	7.4
LSD 5%		0.9	99	NS	NS	NS
HSD 5%		1.6	164			

¹5=Excellent, 3 = Good, 1 = Poor, ²Early Yields from harvest 1 thru 4.

Fruit characteristics are shown in Table 2. Applause had higher external color than all other varieties. Sunbrite had the lowest external color rating while the other varieties were intermediate.

Table 2. Fruit Characteristics, Very Early Tomato Variety Trial - 2005

Variety	External ¹ Color	Internal ¹ Color	Firmness ¹	Blossom ¹ Scar	Shoulder ¹ Appear.	White ¹ Tissue
Applause	4	3	3	2.5	3	2
Debut	2.5	2	2	3	2	2.5
Sunbrite	2	2	2.5	2.5	3	2.5
Sunshine	2.5	3	2	2.5	3	2.5
Sunstart	3	2.5	3	3.5	3	2.5
Indy	3	2	4	2	3.5	3
LSD 5%	0.9	0.8	0.7	NS	0.7	NS
HSD 5%	1.6	1.2	1.2		1.2	

¹See Table in methods section for a description of ratings.

Internal color of Applause and Sunshine were higher than Debut, Sunbrite and Indy. Fruit firmness of Indy was greater than Debut and Sunshine. Shoulder appearance of Indy was rated higher (3.5) than Debut (2.0). All other varieties were rated good for shoulder appearance. There were no differences among varieties for blossom scar size or white tissue in the fruit (Table 2).

SUMMARY

Sunstart had lower vine vigor and produced higher early yields than the other varieties, especially Indy and Sunbrite. No one variety was superior in yield or overall fruit quality.