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EVALUATION OF FRESH-MARKET TOMATO CULTIVARS IN 1973

William L. George, Jr.¹ and James D. Utzinger¹

The selection of cultivars for planting continues to be one of the most important decisions a grower must make. Many new and improved cultivars appear on the market each year. To assist the grower, this report contains the results of 1973 fresh-market stake tomato trials carried out at the OSU Horticultural Farm in Columbus. The trials consisted of 10 cultivars in four replications and 30 cultivars in non-replicated, observation plots.

Cultural Practices

Seed was sown on April 16, 1973. Seedlings were transplanted into 3-inch peat pots on April 30 and field set on May 21. One thousand lb. per acre of 12-12-12 were plowed down on April 4, 1973, based on soil test results. Starter solution of 3 lb. per 50 gal. of 10-52-8 was applied during field setting of transplants at the rate of 1/2 pint per plant. Dymid at 6 lb. per acre was applied on May 22 for weed control. Insect and disease control were carried out at recommended intervals.

Rows were spaced 48 inches apart with plants 18 inches in the row, 15 plants per single row plot. Plants were pruned to two stems by allowing the first lateral below the first flower cluster to develop. All other laterals were removed to the fifth-sixth flower cluster.

The month of June was quite wet. Approximately 7 inches of rain fell in one storm on the night of June 19. Vegetative growth was poor early in the crop because of the weather. The trial received a side dressing of 100 lb. per acre of ammonium nitrate on July 6, resulting in improved growth and fruit production.

Weather Data

<u>Month</u>	<u>Average Temperature</u>	<u>Rainfall (inches)</u>
June	72.6° F.	12.37
July	74.3° F.	4.50
August	74.2° F.	3.10
September	68.9° F.	1.42

The seed for these trials was generously supplied by various seed companies. The seed companies are given by code letters in Tables 1 and 2.

<u>Code</u>	<u>Seed Sources</u>
A-1	Agway, Inc., Buffalo, N.Y. 14240
A-2	Asgrow Seed Co., Orange, Conn. 06477
B-1	Geo. J. Ball, Inc., West Chicago, Ill. 60185
B-2	W. Atlee Burpee Co., Philadelphia, Pa. 19132
H-1	Joseph Harris Co., Rochester, N.Y. 14624
P-1	Peto Seed Co., Saticoy, Calif. 93003
T-1	Otis S. Twilley Seed Co., Salisbury, Md. 21801

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Results and Discussion

The first harvest was made on July 17 and the last on Oct. 5. Results of early yield and season's yield of the 10 cultivars in the replicated trial are presented in Table 1. Significant differences in total marketable early yield among the cultivars were noted, as would be expected on the basis of the earliness range represented by the entries. Fantastic produced the highest early yield, although Jetstar produced the most No. 1 fruit. No significant differences were observed among the cultivars in fruit size of the early production. Good season's yields were produced by most cultivars (Table 1), with Supersonic B leading with 34.7 tons per acre. Ramapo, Supersonic B, and Jetstar produced the best yields of No. 1 fruit. The majority of fruit of most cultivars going into the No. 2 and 3 grades and into culls had cracking defects.

The results of the non-replicated observation plots are presented in Table 2. Several experimental lines, such as W2HF, OCHF, and 88HF, produced good yields and had excellent firmness and quality. These lines as well as some others merit further testing.

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TABLE 1.---Replicated Trial: Yield and Fruit Size of Tomato Cultivars Trained on Stakes.

Cultivar*	Seed Source	Early Harvest to July 31					Season's Harvest to Oct. 5				
		Marketable Yield (Tons/A.)			Percent Culls by Wt.	Fruit Size (Lb.)	Marketable Yield (Tons/A.)			Percent Culls by Wt.	Fruit Size (Lb.)
		No. 1	No. 2 & 3	Total			No. 1	No. 2 & 3	Total		
JET STAR	H-1	1.37	2.03	3.40	3.6	0.31	20.76	9.70	30.46	5.1	0.30
FANTASTIC	P-1	0.67	4.58	5.25	1.6	0.36	12.30	17.23	29.53	4.3	0.33
CAMPBELL 1327	H-1	0.64	2.94	3.58	0.8	0.36	11.24	6.38	17.62	6.0	0.34
SETMORE	H-1	0.55	2.93	3.48	2.6	0.29	8.50	9.94	18.44	6.2	0.31
SUPERSONIC	H-1	0.44	2.70	3.14	1.9	0.34	15.06	13.85	28.91	5.3	0.35
SUPERSONIC B	H-1	0.43	1.59	2.02	1.8	0.37	21.65	13.06	34.71	4.8	0.37
BALL BETTER BOY	B-1	0.31	2.27	2.58	1.9	0.34	8.78	19.76	28.54	5.4	0.36
TROPIC	A-2	0.27	0.69	0.96	1.3	0.35	14.06	15.28	29.34	4.5	0.36
BURPEE VF	B-2	0.20	1.22	1.42	2.1	0.29	16.89	9.36	26.25	4.2	0.35
RAMAPO	H-1	0.19	0.24	0.43	4.2	0.26	21.97	7.01	28.98	5.0	0.37
hsd at 5%		n.s.	----	2.82	---	n.s.	5.63	-----	12.44	---	0.06

*Cultivars ranked in decreasing order of early yield of U.S. No. 1 grade fruits. Data based on mean of four replications.

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TABLE 2.--Non-replicated Observation Plots: Yield and Fruit Size of Tomato Cultivars and Experimental Lines Trained on Stakes.

Cultivar or Experimental Line*	Seed Source	Early Harvest to July 31					Season's Harvest to Oct. 5				
		Marketable Yield (Tons/A.)			Percent Culls by Wt.	Fruit Size (Lb.)	Marketable Yield (Tons/A.)			Percent Culls by Wt.	Fruit Size (Lb.)
		No. 1	No. 2 & 3	Total			No. 1	No. 2 & 3	Total		
OCHF	H-1	2.49	0.97	3.46	0.0	0.32	21.88	14.28	36.16	5.5	0.32
W2HF	H-1	2.06	1.06	3.12	4.7	0.27	22.40	10.84	33.25	4.9	0.28
OFHF	H-1	2.03	4.45	6.48	0.7	0.30	10.77	8.90	19.67	5.0	0.30
SPRINGSET	H-1	1.89	3.22	5.11	6.2	0.25	5.83	8.49	14.32	14.7	0.25
SPRING GIANT HYB.	B-2	1.80	5.83	7.63	6.0	0.34	5.18	17.13	22.31	8.0	0.33
LATE SUMMER VFN	B-1	1.69	2.42	4.11	2.9	0.33	17.35	25.65	43.00	6.7	0.34
EARLY SUMMER VF	B-1	1.38	3.02	4.40	10.4	0.17	8.11	11.25	19.36	13.0	0.26
VF GARDNER	A-1	1.33	0.82	2.15	19.1	0.22	14.40	11.35	25.75	23.0	0.21
88 HF	H-1	1.33	0.27	1.60	1.5	0.29	21.01	8.93	29.94	4.4	0.31
33 HF	H-1	0.85	4.96	5.81	0.0	0.28	5.88	9.75	15.63	7.9	0.26
HOMESTEAD 24	A-2	0.85	0.77	1.62	16.4	0.26	7.19	20.90	28.09	7.3	0.33
MANAPAL	A-2	0.72	0.65	1.37	1.8	0.33	9.58	16.07	25.65	9.0	0.27
EASTERN STATES	A-1	0.58	2.52	3.10	4.7	0.21	8.85	18.85	27.70	13.4	0.21
FLORADEL	A-2	0.56	1.23	1.79	2.7	0.32	10.52	17.83	28.35	11.5	0.33
MID SUMMER VFN	B-1	0.48	3.53	4.01	4.2	0.30	9.05	22.46	31.51	9.3	0.29
SUPER RED	A-1	0.44	2.32	2.76	0.9	0.39	15.00	22.65	37.65	4.0	0.33
PAKMORE	A-2	0.41	1.53	1.94	1.3	0.40	4.07	12.03	16.10	12.0	0.36
TERRIFIC VFN	P-1	0.41	4.11	4.52	1.1	0.37	9.37	20.72	30.09	5.1	0.32
MONTE CARLO VFN	P-1	0.39	0.82	1.21	8.0	0.29	11.57	8.54	20.11	5.2	0.32
HYBRID 980	A-1	0.36	3.56	3.92	6.2	0.30	6.36	15.49	21.85	10.5	0.26
BURPEE BIG EARLY	B-2	0.36	2.06	2.42	1.0	0.28	5.81	27.35	33.16	8.1	0.30
MARKET KING HYB	T-1	0.29	1.43	1.72	8.5	0.31	8.62	24.22	32.84	6.0	0.34
ACE 55 VF	A-2	0.19	0.70	0.90	35.1	0.31	9.82	9.15	18.87	8.6	0.42
CALMART	A-2	0.15	1.67	1.82	2.7	0.30	2.61	8.64	11.25	14.2	0.24
TROPIC-GRO	P-1	0.12	1.55	1.67	0.0	0.30	6.03	14.28	20.31	6.7	0.38
SUPERMARKET	A-2	0.12	1.45	1.57	9.2	0.21	7.53	9.53	17.06	14.3	0.25
WALTER	P-1	0.0	2.08	2.08	3.5	0.34	6.51	7.19	13.70	7.6	0.33
XP 271	A-2	0.0	1.45	1.45	0.0	0.40	2.15	8.52	10.67	10.4	0.31
JUMBO JIM	A-1	0.0	1.04	1.04	0.0	0.43	7.70	27.39	35.09	12.0	0.57
BURPEE DELICIOUS	B-2	0.0	0.80	0.80	9.1	0.66	8.47	18.71	27.18	4.6	0.73

*Ranked in decreasing order of early yield of U.S. No. 1 grade fruits.

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