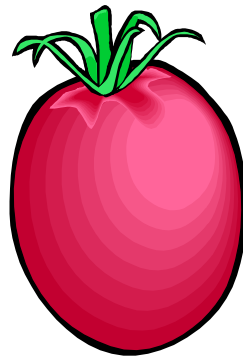


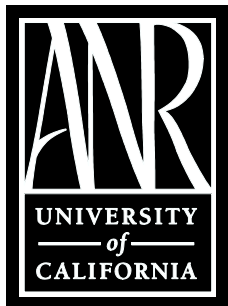
PROCESSING TOMATOES

IN

SAN JOAQUIN, CONTRA COSTA &
STANISLAUS COUNTIES



2005 VARIETY TRIALS SUMMARY
RESEARCH PROGRESS REPORT



University of California Cooperative
Extension
420 South Wilson Way
Stockton, California 95205-6243

2005
SAN JOAQUIN, CONTRA COSTA & STANISLAUS COUNTIES
PROCESSING TOMATO VARIETY TRIAL REPORT

Janet Caprile, UC Horticulture Farm Advisor, Contra Costa County
Jan Mickler, UC Vegetable Crops Farm Advisor, Stanislaus County
Bob Mullen, UC Vegetable Crops Farm Advisor Emeritus, San Joaquin County
Brenna Aegerter, UC Vegetable Crops Farm Advisor, San Joaquin County

CONTRIBUTING AUTHORS:

Scott Whiteley, Extension Field and Lab Technician (San Joaquin County)
Debra Boelk, Staff Research Associate II, (San Joaquin County)
Don Colbert, Extension Field Assistant (San Joaquin County)
Randall Wittie, Extension Field Assistant (San Joaquin County)
Nate Battig, Extension Field Assistant (Stanislaus County)

The processing tomato industry in California depends on the availability of consistently dependable varieties that provide maximum yield and quality, yet conform to the demands of mechanical harvest and handling. In recent years, great emphasis has been placed on developing varieties with improved processing qualities as well as horticultural characteristics, including field vine storage, disease and nematode resistance, transportability and early plant emergence under cool climatic conditions. Breeding programs (public and private) are attempting to provide varieties with high soluble solids, better consistency (viscosity of juice and puree), improved firmness and color, jointlessness, easier peelability, better flavor, improved foliar cover to reduce losses from sunburn/scald, insect, nematode and disease resistance.

Tomato variety trials provide a good opportunity to realistically evaluate and make side-by-side comparisons of various new and standard lines under actual grower field conditions. Standardized procedures for variety trials in a number of counties allow for greater variety comparisons over a wider geographical area. This greatly improves the value of variety trials and the information derived from them.

In 2005, California tomato growers produced a crop below early season forecast of approximately 9.599 million tons, as of this writing. A hot summer produced extreme growing conditions throughout the San Joaquin and Sacramento Valleys. Locally, crop yields were good but with some variability due to heat stress and some disease pressure from Verticillium, Fusarium, Bacterial Speck and a little Phytophthora Late Blight and Powdery Mildew. Harvest continued well into October. As usual, there was also some aphid, worm and stinkbug pressure in some fields.

Two processing tomato variety trials were conducted locally in 2005. One was an early season maturity trial, done cooperatively with Janet Caprile, Contra Costa County Farm Advisor. The grower cooperators, Anthony Massoni and Paul Simoni of Simoni-Massoni Farms, were located near Byron, California. Twelve replicated varieties were direct seeded into twin row 66-inch beds on March 15, 2005. The crop emerged on March 26, 2005; the field variety was Halley 3155. Sprinkler irrigation was utilized to establish the crop stand, followed by furrow irrigation for the balance of the season. A midseason maturity trial was transplanted into double-row 66-inch beds on May 18, 2005, and the field variety was ENP 113. The trial was done cooperatively with Jan Mickler, Stanislaus County Farm Advisor; the grower cooperators were Bill and Chuck Cox of Cox and Perez Farms, and the trial was located between Westley and Vernalis, California, off Highway 33. Furrow irrigation was used throughout the season. The trial contained 16 replicated varieties and another 14 lines in the single replication observation block.

GROWTH AND DEVELOPMENT

Crop growth and development were very good with the Simoni-Massoni Farms early season maturity trial near Byron, California. The soil type at the trial was a Brentwood clay loam. The transplanted midseason maturity trial at Cox and Perez Farms near Westley, California also showed good growth and development, although there were some water stress issues and weed competition from a moderate to heavy infestation of field bindweed. The soil type at the midseason maturity trial was a Yolo clay loam. Fruit set was very good to excellent at the Simoni-Massoni trial in Brentwood. Fruit set was good at Cox & Perez Farms, but some fruit was lost from severe heat and the aforementioned weed problem. Heat stress caused a considerable delay in crop maturity at harvest.

Varieties in the early season trial were direct-seeded using Earthway hand-push planters after the growers had left a preworked, prepared bed area that had already been fertilized with a preplant starter solution, and herbicide had already been applied for the trial, as well as the rest of the field. The midseason maturity trial was a double row transplant field, set by the grower's transplanter and crew. Plant population was 8,700 plants/acre and all preplant fertilizer and herbicide application/incorporation was done by the grower prior to transplanting. The early season maturity trial was mechanically harvested using the grower's harvester while the midseason maturity trial was hand harvested due to a commercial mechanical harvesting company doing the field harvest and the need to get loads harvested as efficiently as possible, which a test plot would have impeded. Cox and Perez Farms graciously provided personnel to help get the trial harvest done as quickly as possible.

Fruit quality samples from all replications for all varieties in each trial were taken just prior to trial harvest and sent to the local Processing Tomato Advisory Board Inspection Station at Panella Trucking, Incorporated, for soluble solids (°Brix), pH and color evaluation. Samples from both trials were also taken by Sam Matoba of the Department of Food Science and Technology at UC Davis, where Dr. Diane Barrett ran °Brix, pH, Bostwick, Titratable acidity (% citric), USDA color, Predicted Past Bostwick, Predicted Paste Yield and Predicted Catsup Yield. Two replications were sampled out of the replicated variety block of each trial, while one sample was taken from each observational line in the trials. The data for all trials sampled by the Department of Food Science and Technology in the Statewide Farm Advisor Tomato Variety Evaluation Project will be provided in Diane Barrett's California League of Food Processors T-4 Project Report.

YIELD

The early season variety trial was harvested mechanically on August 10, 2005. Yields were excellent in the replicated trial with the 12 varieties averaging 47.0 tons/acre. Brix yield average was 2.61 tons/acre, soluble solids (°Brix) average 5.54, fruit color averaged 24.67 and pH averaged 4.37.

The top yielding variety in the replicated early season trial was BOS 66508 at 54.0 tons/acre, followed by H5003 (52.6 tons/acre), BOS 3155 (50.5 tons/acre), U 250 (50.0 tons/acre), H9997 (49.3 tons/acre), APT 410 (49.0 tons/acre) and HMX 2853 (48.2 tons/acre). Yield figures for all the varieties in the replicated trial are presented in **Table 1**, along with fruit quality data on Brix yield, soluble solids (°Brix), fruit color and pH.

The midseason maturity variety trial was hand harvested on September 7, 2005. Yields were only moderate in the trial due to the aforementioned heat stress and weed competition. The entire replicated block of 15 varieties averaged 30.6 tons/acre, while the 14 observation lines averaged only 27.1 tons/acre. Brix yield in the replicated block averaged 1.59 tons/acre, while soluble solids (°Brix) averaged 5.20, fruit color averaged 22.6 and pH averaged 4.28. The 14 observation lines gave an average of 1.42 tons/acre in Brix yield, soluble solids (Brix) averaged 5.3, fruit color averaged 22.4 and pH average 4.33.

The best yielding varieties in the midseason maturity replicated trial were led by Red Spring at 39.1 tons/acre, followed by UG 151 (38.1 tons/acre), Sun 6360 (35.1 tons/acre), U232 (33.2 tons/acre), Sun 6366 (31.5 tons/acre), HMX 3859 (31.3 tons/acre), H5803 (31.0 tons/acre) and PS 345 (29.9 tons/acre). Yield figures for all the varieties in the replicated trial along with fruit quality data on Brix yield, soluble solids (°Brix), fruit color and pH, are contained in **Table 2**.

In the midseason maturity observational trial area, highest yield among the 14 lines evaluated occurred with ENP 113 at 45.1 tons/acre, followed by HMX 4799 (43.2 tons/acre), NDM 3379 (40.8 tons/acre), HMX 4802 (37.8 tons/acre), CPL 4863N (36.4 tons/acre), BOS 67374 (29.3 tons/acre) and HMX 4801 (29.3 tons/acre). Yield figures for all the lines in the observation block, including fruit quality data on Brix yield, soluble solids (°Brix), fruit color and pH, are presented in **Table 3**. The reader of this report is cautioned to remember that results shown in the observation trial are only from one replication of each line.

MANY THANKS

Many thanks to Anthony Massoni and Paul Simoni and Bill Cox and Chuck Cox for their participation and cooperation in these variety trials. These trials can be a disruption in normal grower operations, but these gentlemen put up with these interruptions to increase their own knowledge and to benefit the tomato industry.

Appreciation is also expressed to Chuck Rivara and the California Tomato Research Institute Board for their continued support over 33 years for the Uniform Quality Determinations and Statewide Processing Tomato Variety Trials project conducted by University of California Cooperative Extension.

Thanks also to Tom Ramme, Gary Grant, Kay Ricketts and Sheri Campbell of the Processing Tomato Advisory Board Inspection System for all their help and cooperation in running tomato fruit quality samples from the trials. Appreciation is also expressed to Panella Trucking, Inc. (Bob Panella and Art Pratt) for allowing the quality samples to be run and analyzed at their grading station facility in Stockton, California.

Much gratitude is also expressed to Diane Barrett and Sam Matoba of the UC Davis Department of Food Science and Technology for all their efforts in running fruit quality samples from the Farm Advisor variety trials as part of the processor sponsored T-4 Project, and to Gail Nishimoto, Program Analyst at UC Davis for doing the statistical analysis (individual and combined trials) for the Farm Advisor variety trials project.

Final thanks also to the seed industry, which provides the basic material for the trials and continuing financial support in 2005, and to everyone in the tomato industry for their guidance and support.

2005 STATEWIDE UNIFORM PROCESSING TOMATO VARIETY TRIALS

EARLY SEASON MATURITY VARIETY LIST

Asgrow Seed

APT 410 \$VFFNP

Petoseed

Hypeel 45 \$VFFNP

PS 740 \$VFFNP

H. J. Heinz

H9280 \$VFFNP

H9997 \$VFFNP

H5003 \$VFFNP

Harris Moran Seed

HMX 2853 \$VFFNP

Hazera Seed

HA-3523 \$VFFN

Unilever Seed

U 250 \$VFFNP

U 446

Orsetti

Halley 3155 \$VFF

BOS 66508

DISEASE RESISTANCE AND HYBRID CODES

O.P. = Open Pollinated

\$ = Hybrid

V = Verticillium Wilt Race I Resistant

F = Fusarium Wilt - Race I Resistant

FF = Fusarium - Wilt Race I and II Resistant

FFF = Fusarium Wilt - Race I, II
and III Resistant

T = Tobacco Mosaic Resistance

N = Root Knot Nematode Resistant

P = Bacterial Speck Resistant

Table 1. 2005 Early Season Processing Tomato Variety Trial
 Massoni and Simoni Farms – Byron, California

Replicated Varieties

Variety	Seed Co.	Yield (tons/Acre)	Brix Yield ¹ (tons/Acre)	Soluble ¹ Solids (° Brix)	pH ¹	Color ¹ PTAB
BOS 66508	Orsetti Seed	54.0 A	2.97	5.50	4.33	24.25
H5003	Heinz Seed	52.6 AB	3.05	5.80	4.40	24.00
BOS 3155	Orsetti Seed	50.5 ABC	2.99	5.93	4.28	26.50
U 250	Unilever Seed	50.0 ABC	2.59	5.18	4.39	25.50
H9997	Heinz Seed	49.3 BCD	2.58	5.23	4.41	23.50
APT 410	Asgrow Seed	49.0 BCD	2.60	5.30	4.34	24.50
HMX 2853	Harris Moran Seed	48.2 CD	2.87	5.95	4.38	25.50
Hypeel 45	Peto Seed	45.9 DE	2.73	5.95	4.31	25.25
H9280	Heinz Seed	43.2 E	2.20	5.08	4.32	24.50
U 446	Unilever Seed	42.5 E	2.37	5.58	4.37	23.50
PS 740	Peto Seed	42.4 E	2.46	5.80	4.34	24.50
HA-3523	Hazera Seed	36.0 F	1.87	5.20	4.52	24.50
LSD @ 0.05 =		4.2	0.32	0.39	0.06	1.35
C.V. (%) =		12.3	15.4	7.9	1.6	4.8
Mean		47.0	2.61	5.54	4.37	24.67

¹ Average of four replications

2005 STATEWIDE UNIFORM PROCESSING TOMATO VARIETY TRIALS

MID SEASON MATURITY VARIETY LIST

<u>AB Seed Co.</u> AB2 \$VFFNP		<u>Nippon Del Monte</u> NDM 3379	
<u>CTRI</u> CPL 4863 VFFN-O.P.		<u>Orsetti Seed</u> Halley 3155 \$VFF BOS 67374	
<u>De Ruiter</u> DRI 9730		<u>Petoseed</u> PS 607 \$VFFN PS 345 \$VFFNP	
<u>H.J. Heinz</u> H8892 \$VFFN H2401 \$FVFN H5803 \$VFFNP		H2601 \$VFFNP H9665 \$VFFNP H9780 \$VFFNP H8004 \$VFFNP	<u>Sunseeds</u> Sun 6360 \$VFFNP Red Spring Sun 6368 Red Sky \$VFFP Sun 6366 \$VFFNP Sun 6371
<u>Harris Moran</u> HMX 3859 \$VFFNP HMX 4798 \$VFFF3NP HMX 4799 \$VFFNP		HMX 4801 \$VFFNP HMX 4802 \$VFFF3NP	<u>Uniliver Seed</u> U 005 \$VFFNP U 567 U 232 \$VFFNP
		<u>United Genetics</u> ENP 113 \$VFFNP UG 151 \$VFFN	

DISEASE RESISTANCE AND HYBRID CODES

\$	= Hybrid	N	= Root Knot Nematode Resistant
V	= Verticillium Wilt Race I Resistant	P	= Bacterial Speck Resistant
F	= Fusarium Wilt Race I Resistant	j	= jointless
FF	= Fusarium Wilt - Race I and II Resistant	O.P.	= Open Pollinated
FFF3	= Fusarium Wilt - Race I, II and III Resistant		

Table 2. 2005 Midseason Processing Tomato Variety Trial
Cox and Perez Farms – Westley, California

Replicated Varieties

Variety	Seed Company	Yield ¹ (tons/Acre)	Brix Yield ¹ (tons/Acre)	Soluble ¹ Solids (° Brix)	Color ¹ PTAB	pH ¹
Red Spring	Sun Seeds	39.1A	1.880	4.83	23.25	4.37
UG 151	United Genetics	38.1AB	1.814	4.78	22.00	4.35
Sun 6360	Sunseeds	35.1ABC	1.699	4.85	21.25	4.32
U 232	Unilever Seed	33.2ABC	1.688	5.15	22.25	4.24
Sun 6366	Sunseeds	31.5ABCD	1.759	5.65	23.25	4.33
HMX 3859	Harris Moran Seed	31.3ABCD	1.726	5.57	24.00	4.31
H5803	Heinz Seed	31.0ABCD	1.807	5.80	21.00	4.26
PS 345	Petoseed	29.9 BCD	1.493	5.00	23.75	4.28
H2601	Heinz Seed	29.0 CD	1.462	5.03	22.50	4.31
H8892	Heinz Seed	28.9 CD	1.447	4.95	21.75	4.29
H2401	Heinz Seed	27.9 CD	1.467	5.25	23.25	4.17
Halley 3155	Orsetti Seed	27.5 CD	1.553	5.67	22.50	4.27
H9665	Heinz Seed	26.8 CD	1.293	4.80	22.25	4.28
AB2	AB Seeds	26.7 CD	1.493	5.57	22.75	4.22
U 005	Unilever Seed	23.6	1.200	5.07	23.25	4.24
LSD @ 0.05 =		n.s.	n.s.	0.40	n.s.	00.4
C.V. =		20.8%	21.4%	5.4%	13.3%	0.7%
Mean:		30.6	1.585	5.20	22.60	4.28

¹ Average of four replications

Table 3.

2005 Midseason Processing Tomato Variety Trial
Cox and Perez Farms – Westley, California

Observation Varieties

Variety	Seed Company	Yield ¹ (tons/Acre)	Brix Yield ¹ (tons/Acre)	Soluble ¹ Solids (°Brix)	Color ¹ PTAB	pH ¹
ENP 113	United Genetics	45.1	2.392	5.30	23.00	4.40
HMX 4799	Harris Moran Seed	43.2	2.029	4.70	21.00	4.34
NDM 3379	Nippon Del Monte Seed	40.8	2.203	5.40	21.00	4.39
HMX 4802	Harris Moran Seed	37.8	1.929	5.10	23.00	4.39
CPL 4863N	California Tomato Research Institute	36.4	1.749	4.80	22.00	4.32
BOS 67374	Orsetti Seed	29.3	1.612	5.50	22.00	4.30
HMX 4801	Harris Moran Seed	29.3	1.582	5.40	20.00	4.37
U 567	Unilever Seed	27.3	1.448	5.30	22.00	4.36
H8004	Heinz Seed	24.6	1.277	5.20	23.00	4.29
H9780	Heinz Seed	24.4	1.266	5.20	23.00	4.26
Sun 6371	Sunseeds	13.9	0.804	5.80	21.00	4.34
PS 607	Petoseed	13.1	0.693	5.30	24.00	4.36
HMX 4798	Harris Moran Seed	10.7	0.620	5.80	24.00	4.34
DRI-9730	De Ruiter Seed	3.6	0.203	5.70	24.00	4.22
Mean:		27.1	1.415	5.32	22.36	4.33
¹ Average of only one replication						

**2005 STATEWIDE
PROCESSING TOMATO
VARIETY TRIALS**

2005 STATEWIDE PROCESSING TOMATO VARIETY EVALUATION TRIALS

Since 1972, the California Tomato Research Institute, in cooperation with UC Cooperative Extension, has supported the Statewide UCCE Farm Advisor/Specialist Processing Tomato Variety Evaluation Project. This project has supplied growers, processors, seedsmen and field personnel with valuable information on variety yield performance in field trials over a wide geographical area as well as giving vital data on processing quality characteristics. It has also provided critical data to individual production districts and counties on varietal adaptability to local conditions. This year, the project evaluated 11 replicated early maturing varieties, 16 replicated midseason maturing lines and 15 single replication observation midseason maturity selections common to almost all trial locations. Individual county trial reports should be obtained to get an accurate tabulation of varieties tested in both the early and midseason maturity trials.

This season saw statewide processing tomato production approaching 9.599 million tons at this writing, about 1.7 million tons less than the 2004 crop. A prolonged wet spring delayed some planting and along with some disease problems in the San Joaquin Valley and elsewhere, plus a very hot summer, caused some reduction in plant stand and yield. Also planted acreage was down in 2005 due to the large crop harvested in 2004. Diseases that occurred, although not wide spread, included Bacterial Speck, Verticillium Wilt, Late Blight, Powdery Mildew and some minor virus outbreaks. Insect pressure was below average with some local problems involving aphids, fruit worm, stinkbugs and garden centipede. Harvest was not completed until late October.

The statewide UCCE variety evaluation project averaged 42.0 tons/acre for the early season replicated variety trials and 36.9 tons/acre for the midseason maturity replicated trials. Early season soluble solids (°Brix) averaged 5.3, while soluble solids in the midseason replicated trials averaged 5.5. Early season color in the replicated trials (24.5) was not as good as 2004, while color in the midseason replicated trials was 23.6, which was better than 2004. pH levels in the early season replicated trials were lower (4.39) than 2004 while the pH levels in the midseason replicated trials (4.38) were slightly higher than 2004.

Results and Discussion

Eight counties (Colusa, Yolo, Contra Costa, San Joaquin, Stanislaus, Merced, Fresno and Kern) participated in the statewide variety evaluation studies this past season, conducting five early and five midseason trials. All of the early season trials were direct-seeded, while the midseason trials were a combination of direct-seeding and transplanting. The three following tables represent summaries of combined yield and fruit quality from the 2005 Statewide UCCE Farm Advisor/Specialist Processing Tomato Variety Evaluation Project. These summaries were obtained from the computer trial data analyses done by Gail Nishimoto, Program Analyst, at UC Davis and coordinated by Jan Mickler, Vegetable Crops Farm Advisor in Stanislaus County.

Table A represents yield and quality means from the Uniform Replicated Early Season Maturity Variety trials. Results of five trials from Colusa, Yolo, Contra Costa/San Joaquin and Fresno Counties are contained in this analysis. Highest yield in the combined data was achieved by H5003 and H9997, both at 47.5 tons/acre, followed by BOS 66508 (45.1 tons/acre), U 250 (44.8 tons/acre), HMX 2853 (42.4 tons/acre) and APT 410 (42.1 tons/acre). In terms of fruit quality the top varieties in soluble solids (°Brix) were Hypeel 45 at 5.7, and H5003 (5.7), followed by BOS 66508 (5.5), PS 740 (5.5) and APT 410 and U 446, both at 5.4. Highest Brix yield occurred with H5003 (2.73 tons/acre), followed by BOS 66508 (2.50 tons/acre), H9997 (2.46 tons/acre) and Hypeel 45 (2.38 tons/acre). Best fruit color was H9997 (23.4), followed by BOS 66508 (23.8) and H5003 and HA-3523, both at 23.9. Best pH levels were shown by PS 740 (4.32), Hypeel 45 (4.32), BOS 66508 (4.35) and H9280 (4.37). An Agtron color meter is used to determine fruit color, so the lower the numerical value, the better the fruit color; pH levels are best when at 4.35 or lower.

Table B presents results from the Midseason Maturity Replicated Variety trials. Data is shown for five trials in five county locations (Yolo, Stanislaus/San Joaquin, Merced, Fresno and Kern). Best combined yield was provided by U 232 at 42.1 tons/acre, followed by Sun 6366 (39.6 tons/acre), UG 151 (39.2 tons/acre), Sun 6368 (39.0 tons/acre), PS 345 (38.8 tons/acre), H8892 (37.4 tons/acre) and Sun 6360 and H2401, both at 37.2 tons/acre. Best soluble solids occurred with H5803 at 6.0, followed closely by HMX 3859 and AB2, both at 5.9, Sun 6368 (5.8), and Sun 6366 and Halley 3155, both at 5.6. Best Brix yield was attained by Sun 6368 at 2.24 tons/acre, followed by Sun 6366 (2.18 tons/acre), H5803 (2.15 tons/acre), U 232 (2.12 tons/acre) and PS 345 (2.05 tons/acre). Varieties showing the best fruit color were led by Red Spring and Sun 6360, both at 22.7, H5803 (22.9), UG 151 and H8892, both at 23.1, U 232 and H2401, both at 23.2 and Halley 3155 (23.3). Best pH levels were given by H2401 (4.28), AB2 (4.33), U 232 and H9665, both at 4.34, and Halley 3155 and U 005, both at 4.35.

Table C shows data summarized for the Midseason Maturity Observation Variety trials from four county locations (Yolo, Stanislaus/San Joaquin, Merced and Fresno). Highest combined yield in the trials was led by HMX 4802 at 45.0 tons/acre, followed by HMX 4799 (40.8 tons/acre), BOS 67374 (40.4 tons/acre), CPL 4863 (40.2 tons/acre), NDM 3379 (40.00 tons/acre), H9780 (39.3 tons/acre), H8004 (38.8 tons/acre) and Sun 6374 (37.4 tons/acre). Best soluble solids were achieved by H8004 and Sun 6371, both at 5.8, followed by Sun 6374 and DRI 9730, both at 5.7, HMX 4798 (5.6) and BOS 67374, NDM 3379 and PS 607, all at 5.5. Varieties giving the highest Brix yield were HMX 4802 at 2.26 tons/acre, followed by H8004 (2.23 tons/acre), BOS 67374 (2.18 tons/acre), Sun 6374 (2.15 tons/acre), NDM 3379 (2.13 tons/acre) and H9780 (2.10 tons/acre). Best fruit color was attained by HMX 4799, BOS 67374, and HMX 4801, all at 22.0, followed by U 519 (22.4), Sun 6371 (22.5) and PS 607 (22.8). Best pH levels were shown by DRI 9730 (4.29), H9780 (4.30), Sun 6371 (4.34), H8004 (4.35), BOS 67374 (4.36) and Sun 6374 (4.37).

TABLE A. 2005 Combined location Means for Yield, Brix, Brix Yield, Color and pH of Replicated Early Maturity Processing Tomato indicating significant location x variety interactions for all variables but Brix. Five locations: Yolo, Colusa, Contra Costa/San Joaquin and Fresno (1 & 2) Counties

Variety	Yield (Tons/A) Combined Locations		Brix (%)	Brix Yield (Tons/A)	Color	pH
H5003	47.5	A	5.7	2.73	23.9	4.41
H9997*	47.5*	A	5.2*	2.46*	23.4*	4.43*
BOS 66508	45.1	B	5.5	2.50	23.8	4.35
U 250	44.8	B	5.0	2.24	26.3	4.40
HMX 2853	42.4	C	5.3	2.28	25.4	4.43
APT 410	42.1	C	5.4	2.26	24.1	4.39
Hypeel 45	41.3	C D	5.7	2.38	25.1	4.32
H9280	40.2	D E	4.9	1.97	25.3	4.37
PS 740	39.4	E	5.5	2.18	24.5	4.32
HA-3523	37.0	F	5.1	1.88	23.9	4.49
U 446	35.7	F	5.4	1.93	24.1	4.41
MEAN:	42.0		5.3	2.25	24.5	4.39
C.V. (%)	7.0		4.6	8.1	4.4	1.0
Location x Variety LSD @ 0.05:	4.1		n.s.	0.26	1.5	0.06
* H9997 not tested in Yolo County Trial To compare pairs of means of 20 plots each (all means except H9997) LSD @ 0.05:	1.84		0.2	0.11	0.7	0.03

TABLE B. 2005 Combined location Means for Yield, Brix, Brix Yield, Color and pH of Replicated Midseason Maturity Processing Tomato Varieties indicating significant location x variety interactions for all variables but color. Five locations: Yolo, Stanislaus/San Joaquin, Merced, Fresno and Kern Counties

Variety	Yield (Tons/A) Combined Locations		Brix (%)	Brix Yield (Tons/A)	Color	pH
U 232	42.1	A	5.1	2.12	23.2	4.34
Sun 6366	39.6	A B	5.6	2.18	23.8	4.42
UG 151	39.2	A B C	5.2	1.99	23.1	4.45
Sun 6368*	39.0*	A B C	5.8*	2.24*	24.2*	4.44*
PS 345	38.8	B C	5.4	2.05	25.2	4.38
H8892	37.4	B C D	5.3	1.97	23.1	4.38
Sun 6360	37.2	B C D	5.2	1.91	22.7	4.41
H2401	37.2	B C D	5.4	1.99	23.2	4.28
H9665	37.1	B C D	5.0	1.85	24.0	4.34
H5803	36.7	B C D	6.0	2.15	22.9	4.38
Red Spring	36.5	C D	5.2	1.88	22.7	4.47
HMX 3859	34.6	D E	5.9	1.99	24.3	4.45
H2601	34.4	D E	5.4	1.81	24.2	4.38
U 005	34.3	D E	5.4	1.84	24.5	4.35
AB2	33.3	E	5.9	1.92	23.7	4.33
Halley 3155	33.0	E	5.6	1.83	23.3	4.35
MEAN:	36.9		5.5	1.98	23.6	4.38
C.V. (%)	13.4		6.5	13.8	7.0	1.2
Location x Variety						
LSD @ 0.05:	6.9		0.5	0.38	n.s.	0.07
* Sun 6368 not tested in Stanislaus/San Joaquin County Trial To compare pairs of means of 20 plots each (all means except Sun 6368)						
LSD @ 0.05:	3.1		0.2	0.17	1.0	0.03

TABLE C. 2005 Combined location Means for Yield, Brix, Brix Yield, Color and pH of Observed Midseason Maturity Processing Tomato Varieties. Four locations: Yolo, Stanislaus/San Joaquin, Merced and Fresno Counties

Variety	Yield (Tons/A) Combined Locations		Brix (%)	Brix Yield (Tons/A)	Color	pH
HMX 4802	45.0	A	5.1	2.26	24.5	4.46
HMX 4799	40.8	A B	5.0	2.02	22.0	4.43
BOS 67374	40.4	A B C	5.5	2.18	22.0	4.36
CPL 4863	40.2	A B C	5.1	2.04	23.0	4.39
NDM 3379	40.0	A B C	5.5	2.13	23.8	4.41
H9780	39.3	A B C	5.4	2.10	24.3	4.30
H8004	38.8	A B C	5.8	2.23	23.0	4.35
Sun 6374*	37.4*	A B C D	5.7*	2.15*	23.4*	4.37
U 567	36.3	A B C D	4.9	1.73	23.5	4.45
HMX 4801	35.9	A B C D	5.4	1.93	22.0	4.49
U 519*	34.8*	B C D	5.2*	1.77*	22.4	4.46
HMX 4798	32.6	B C D	5.6	1.78	23.0	4.39
Sun 6371	31.5	C D	5.8	1.75	22.5	4.34
PS 607	29.3	D	5.5	1.58	22.8	4.40
DRI 9730	29.2	D	5.7	1.60	24.0	4.29
MEAN:	37.2		5.4	1.97	23.1	4.39
C.V. (%):	17.1		5.0	1.78	5.9	1.3
LSD @ 0.05:	9.1		0.4	n.s.	n.s.	0.08

* Sun 6374 and U 519 not tested in Stanislaus/San Joaquin County trial

To compare means of 4 plots each (all means except Sun 6374 & U 519, which both have 3 plots)
LSD @ 0.05: 9.1 0.39 n.s. n.s. 0.08

**University of California Cooperative Extension
of San Joaquin County
420 South Wilson Way, Stockton, California 95205-6243
Telephone (209) 468-2085**

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