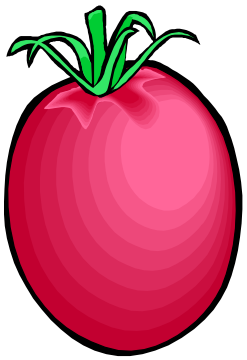
PROCESSING TOMATOES

IN SAN JOAQUIN & CONTRA COSTA COUNTIES



2002 VARIETY TRIALS SUMMARY RESEARCH PROGRESS REPORT

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2002
SAN JOAQUIN AND CONTRA COSTA COUNTY
PROCESSING TOMATO VARIETY TRIAL REPORT

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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 2002, California tomato growers produced an 11.06 million ton crop, nearly 500,000 tons more than originally projected. Good weather, coupled with only moderate disease pressure, resulted in an excellent crop. Locally, the season experienced almost ideal climatic growing conditions for producers. Yields in San Joaquin County, with the exception of a few early season diseased fields, will almost certainly exceed the statewide average. Harvest finally finished during the third week of October. Disease pressure was not high, but there was some Verticillium Wilt, Fusarium Foot Rot and Powdery Mildew; a few early fields also experienced some Phytophthora Root Rot problems. There was also some aphid and worm pressure in fields but they were manageable with good IPM programs.

Two processing tomato variety trials were conducted locally in 2002. One was an early season maturity trial, cooperatively done 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 and another 12 observational lines were direct-seeded into twin row beds on March 1, 2002. With cooler than normal temperatures, the crop did not emerge until March 24, 2002; the field variety was Halley 3155. Sprinkler irrigation was utilized until crop establishment, followed by furrow irrigation for the balance of the season. A midseason maturity trial, utilizing transplants produced by the Plants Plus Nursery (Phil Perez) near Walnut Grove, California, was established at Robertson Farms (Hal Robertson) north of Linne Road and east of Interstate 5 in the Tracy area. The trial contained seventeen replicated varieties and another 21 lines in an observation block. The field variety was H-9663 and the trial was transplanted on May 9, 2002. Furrow irrigation was used throughout the season.

GROWTH AND DEVELOPMENT

Crop growth and development were excellent with the early season maturity trial at Simoni-Massoni Farms. The field soil type for the early season trial was a Brentwood clay loam. Crop growth and plant development were also outstanding at the midseason maturity trial with Robertson Farms. Good grower irrigation management insured that the young transplants were not stressed and stand survival was nearly 100%. The soil type at midseason maturity trial was a Sorrento silty clay. Fruit set and size were very good at both trials, guaranteeing high yield potential.

Varieties for the early season maturity 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 this trial, as well as the rest of the field. For the midseason maturity trial the varieties were single row transplanted with commercial 5-row transplanting units and the plants were provided by Plants Plus Nursery. As in the early season trial, bed preparation had included preplant fertilizer and herbicide incorporation. The transplanting help provided by Crimson Valley North (Hal Robertson / Bob Williams) was greatly appreciated. Bed spacing was 66 inches for both trials. The early season trial was mechanically harvested using the growers' harvester while the midseason trial was hand harvested, due to the lateness of the season and because a commercial mechanical harvesting company did the actual field harvest, needing to get loads picked as quickly as possible. Robertson Farms graciously provided personnel to help get the trial hand harvest done as quickly and efficiently 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, Titrateable acidity (% citric), USDA color, Predicted Paste 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 maturity trial was mechanically harvested on August 5, 2002. Yields were outstanding in the replicated trial with the 12 varieties averaging 56.7 tons/acre. Brix yield average was 2.891 tons/acre, soluble solids (°Brix) averaged 5.10 and fruit color averaged 24.0. The 12 varieties in the single replication observation block averaged 51.3 tons/acre in yield with soluble solids at 4.81, color at 23.5 and Brix yield at 2.469 tons/acre.

The top yielding variety in the replicated early season trial was H-1100 at 67.2 tons/acre, followed by H-1400 (63.4 tons/acre), Halley 3155 (59.9 tons/acre), HyPeel 45 (56.6 tons/acre), and H-9997 (56.0 tons/acre). Yield figures for all the varieties in the replicated trial are shown in **Table 1**., along with fruit quality data on soluble solids (°Brix) Brix yield and fruit color. Due to a communication problem, pH (acidity) levels were not measured for this trial.

Highest yield in the observation block of the early season trial was attained by H-1100 at 65.0 tons/acre, followed by AP 957 (60.2 tons/acre), CXD 224 (59.8 tons/acre), Sun 6358 (56.4 tons/acre) and HyPeel 45 (56.0 tons/acre). Complete data on yield, soluble solids (Brix), Brix yield and fruit color for all of the varieties in the early season observation block are given in **Table 2**.

The midseason maturity variety trial was hand harvested on September 12th and 13th, 2002. Yields were excellent in the trial, with the entire replicated block of 17 varieties averaging 48.8 tons/acre, while the 21 observation lines averaged 47.4 tons/acre. Soluble solids in the replicated block average 4.97, while fruit color averaged 23.3. Brix yield averaged 2.417 tons/acre and pH averaged 4.40. The 21 observation lines gave an average of 4.96 for soluble solids, 23.1 for color, 2.343 tons/acre for Brix yield and 4.43 for pH.

The best yielding varieties in the midseason maturity replicated trial were AB 5 at 60.9 tons/acre, followed by AB 2 (57.5 tons/acre), H-8892 (57.0 tons/acre), HMX 830 (52.0 tons/acre), Sun 6324 (51.8 tons/acre) and CXD 215 (51.3 tons/acre). Yield figures for all of the varieties in the replicated trial, along with fruit quality data on soluble solids, Brix yield, fruit color and pH, are contained in **Table 3.**

In the midseason observational trial block, highest yield among the 21 lines was achieved by HMX 1852 at 62.4 tons/acre, followed by H-1300 (59.5 tons/acre), U-729 (59.5 tons/acre), PS 296 (58.8 tons/acre), HMX 1851 (57.0 tons/acre), U-447 (52.3 tons/acre and NDM 0098 (48.3 tons/acre). Remember the results shown are only from one replication of each line in the observational trial. Yield figures for all of the lines in the observational trial, including fruit quality data on soluble solids, Brix yield, fruit color and pH, are presented in **Table 4.**

MANY THANKS

Many thanks to Anthony Massoni and Paul Simoni and Hal Robertson and Bob Williams 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. Thanks also to Philip Perez of Plants Plus near Walnut Grove, California, for providing the excellent transplants used in the midseason variety trial. Appreciation is also expressed to Chuck Rivara and the California Tomato Research Institute Board for their continued support over 30 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 Enrique Herrera, Staff Research Associate 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 2002, and to everyone in the tomato industry for their guidance and support.

2002 STATEWIDE UNIFORM PROCESSING TOMATO VARIETY TRIALS

EARLY SEASON MATURITY VARIETY LIST

Asgrow Seed
- APT 410 $VFFNP
- AP 957 $VFFNP

Campbell Soup
- CXD 224 $VFFNP
- CXD 227 $VFFFNP

CTRI
- CTRI 1056 VFFNP – O.P.

H. J. Heinz
- H-9280 $VFFNP
- H-9888 $VFFNP
- H-1100 $VFFNP
- H-1400 $VFFNP
- H-9997 $VFFNP

Hazera Seed
- Calista $VFF

Orsetti
- Halley (BOS 3155) $VFF

Petoseed
- Hypeel 45 $VFFNP
- Peto 816 $VFFNP

Sunseed
- Sun 6358 $VFFNP

United Genetics, Inc.
- UGX 8168 $VFFNP

DISEASE RESISTANCE AND HYBRID CODES

O.P.	= Open Pollinated	FFF	= Fusarium Wilt - Race I, II and II Resistant
$	= Hybrid	TMV	= Tobacco Mosaic Resistance
V	= Verticillium Wilt Race I Resistant	N	= Root Knot Nematode Resistant
F	= Fusarium Wilt - Race I Resistant	P	= Bacterial Speck Resistant
FF	= Fusarium - Wilt Race I and II Resistant		

Table 1. 2002 EARLY SEASON PROCESSING TOMATO VARIETY TRIAL
Simoni & Massoni Farms - Byron, California

	Replicated Varieties					
	Variety	**Seed Co.**	**Yield (tons/acre)**	**Brix Yield (tons/acre)**	**Soluble Solids (°Brix)**	**Color (Agtron)**
	H 1100	Heinz	67.2 a	3.326 a	4.95 cd	25.5 a
	H 1400	Heinz	63.4 ab	3.316 a	5.23 b	24.8 abc
	Halley 3155	Orsetti	59.9 abc	3.144 ab	5.25 b	25.0 ab
*	**HyPeel 45**	Peto	56.6 bc	3.141 ab	5.55 a	24.3 abcd
	H 9997	Heinz	56.0 bc	2.593 cd	4.63 e	22.5 e
	UGB 8168	United Genetics	55.4 c	2.759 bcd	4.98 cd	24.0 bcd
*	**H 9280**	Heinz	55.1 c	2.440 d	4.43 e	24.5 abcd
	CTRI 10-56	CTRI	54.3 c	3.003 abc	5.53 a	23.5 cde
	PS 816	Peto	53.9 c	2.964 abc	5.50 a	23.8 bcde
	CXD 224	Campbell	53.8 c	2.706 bcd	5.03 bcd	23.5 cde
	H 9888	Heinz	52.8 c	2.735 bcd	5.18 bc	23.3 de
*	**APT 410**	Asgrow	52.3 c	2.563 cd	4.90 d	23.5 cde
	AVERAGE		56.7	2.891	5.10	24.0
	LSD @ 5%		7.9	0.1	0.20	1.3
	C.V.		12.0	13.9	7.3	4.7

* Standard comparison variety

Table 2. 2002 EARLY SEASON PROCESSING TOMATO VARIETY TRIAL
Simoni & Massoni Farms – Byron, California

Observational Varieties

	Variety	Seed Co.	Yield (tons/acre)	Brix Yield (tons/acre)	Soluble Solids (°Brix)	Color (Agtron)
	H 1100	Heinz	65.0	3.251	5.00	24
	AP 957	Asgrow	60.2	2.829	4.70	24
	CXD 224	Campbell	59.8	2.930	4.90	24
	Sun 6358	Sun Seeds	56.4	2.763	4.90	24
*	**HyPeel 45**	Peto	56.0	2.911	5.20	24
	Halley 3155	Orsetti	53.9	2.478	4.60	23
	H 9997	Heinz	52.2	2.349	4.50	22
*	**APT 410**	Asgrow	46.3	2.317	5.00	23
*	**H 9280**	Heinz	45.5	1.958	4.30	23
	CTRI 10-56	CTRI	42.8	2.139	5.00	23
	CXD 227	Campbell	40.7	1.995	4.90	25
	Calista	Hazera Seed	36.4	1.708	4.70	23

***** Standard comparison variety

2002 STATEWIDE UNIFORM PROCESSING TOMATO VARIETY TRIALS

MID SEASON MATURITY VARIETY LIST

AB Seeds
- AB 2 $VFFP
- AB 405 $VFFNP
- AB 5 $VFFNP

Asgrow Seed
- AP 938 $VFFNP

Campbell Soup
- CXD 207 $VFFN
- CXD 208 $VFFN
- CXD 215 $VFFFNP
- CXD 221 $VFFFNP
- CXD 222 $VFFNP

CTRI
- CTRI 1056 VFFN-O.P

H. J. Heinz
- H-8892 $VFFN
- H-9663 $VFFNP
- H-9665 $VFFNP
- H-2501 $VFFNP
- H-2801 $VFFNP
- H-1300 $VFFNP
- H-9995 $VFFNP
- H-9998 $VFFNP
- H-2601 $VFFNP
- H-9780 $VFFNP

Harris Moran
- HM 830 $VFFN
- HMX 1851 $VFFNj
- HMX 1852 $VFFNj

Lipton
- U 447 $VFFN
- U 729 $VFFN
- U 922 $VFFNP

Nippon Del Monte
- NDM 0098 $VFFN

Orsetti Seed
- Halley $VFF
- BOS 24675 $VFFN

Petoseed
- HyPeel 347 $VFFNP
- PX 24 $VFFNP
- PS 849 $VFFNP
- PS 296 $VFFNP

Rogers Seed (Novartis)
- La Rossa $VFF

Sunseeds
- Sun 6324 $VFFNP
- Sun 6119 $VFFN
- Sun 6340 $VFFNP

United Genetics
- ENP 113 $VFFNP

DISEASE RESISTANCE AND HYBRID CODES

O.P.	= Open Pollinated	TMV	= Tobacco Mosaic Resistance
$	= Hybrid	C	= Bacterial Canker Tolerance
V	= Verticillium Wilt Race I Resistant	N	= Root Knot Nematode Resistant
F	= Fusarium Wilt Race I Resistant	P	= Bacterial Speck Resistant
FF	= Fusarium Wilt - Race I and II Resistant	j	= jointless
FFF	= Fusarium Wilt - Race I, II and III Resistant		

Table 3. 2002 MIDSEASON PROCESSING TOMATO VARIETY TRIAL
Robertson Farms – Tracy, California

Replicated Yield Trial

Replicated Variety	Yield (tons/acre)	Brix Yield (tons/acre)	°Brix (% Soluble Solids)	PTAB Color	pH
AB 5	60.9	3.239	5.33	23.00	4.37
AB 2	57.5	2.879	5.03	23.25	4.39
H 8892	57.0	2.536	4.45	23.75	4.38
HMX 830	52.0	2.515	4.83	24.50	4.45
Sun 6324	51.8	2.752	5.48	23.25	4.47
CXD 215	51.3	2.479	4.83	24.00	4.43
H-2601	50.7	2.403	4.78	23.20	4.45
Halley 3155	50.6	2.449	5.00	23.75	4.41
H-9665	49.3	2.341	4.75	23.75	4.34
CXD 221	47.1	2.526	5.60	23.25	4.38
H-2501	46.5	2.339	5.03	22.00	4.40
CTRI 10-56	44.7	2.140	4.80	22.25	4.41
PS 849	44.7	2.138	4.78	24.25	4.37
AP938	43.5	2.190	5.05	23.50	4.40
CXD 222	43.1	2.252	5.03	23.25	4.40
H-9780	42.5	2.176	5.13	23.00	4.35
H-9998	38.0	1.730	4.55	22.00	4.44
LSD @ 5%	8.9	0.43	0.30	1.20	0.06
C.V.	12.8%	12.5	4.5	3.6	1.0
Mean	48.8	2.417	4.97	23.31	4.40

Table 4. 2002 MIDSEASON PROCESSING TOMATO VARIETY TRIAL
Robertson Farms – Tracy, California

Observation Yield Trial					
Observation Variety	**Yield (tons/acre)**	**Brix Yield (tons/acre)**	**°Brix (% Soluble Solids)**	**PTAB Color**	**pH**
HMX 1852	62.4	2.810	4.5	23	4.46
H-1300	59.5	2.619	4.4	22	4.40
U 729	59.5	2.917	4.9	25	4.42
PS 296	58.8	3.175	5.4	23	4.35
HMX 1851	57.0	2.792	4.9	26	4.60
U 447	52.3	2.666	5.1	23	4.43
NDM 0098	48.3	2.510	5.2	22	4.45
U 922	47.9	2.252	4.7	23	4.47
BOS 24675	46.5	1.998	4.3	25	4.42
H-9663	46.1	2.213	4.8	23	4.40
Sun 6340	45.4	2.042	4.5	22	4.46
H-9995	45.0	2.205	4.9	23	4.25
HyPeel 347	45.0	2.205	4.9	24	4.32
CXD 208	42.5	2.208	5.2	22	4.57
ENP 113	42.5	2.208	5.2	23	4.42
H-2801	41.7	2.254	5.4	21	4.37
Sun 6119	40.4	2.184	5.4	26	4.45
CXD 207	39.9	2.036	5.1	21	4.55
La Rossa	39.2	1.921	4.9	23	4.41
AB 405	39.2	2.117	5.4	22	4.40
PX 24	37.4	1.869	5.0	24	4.38

2002 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 performance in field trials over a wide geographical area as well as for processing quality characteristics. It has also provided vital data to individual production districts and counties on varietal adaptability to local conditions. This year, the project evaluated 12 replicated early maturing varieties, 17 replicated midseason maturing lines and 25 single replication (observational) early and midseason maturity selections common to all locations.

This past season saw statewide processing tomato production at 11.06 million tons –about 500,000 tons more than what had been projected. Good climatic conditions, judicious water management and no major disease and insect problems contributed to the high yields statewide. Harvest was completed by late October, with an open, warm, dry summer/early fall. Disease pressure for the whole season was low to moderate with some problems with Fusarium Foot Rot, Verticillium Wilt and Powdery Mildew. Isolated early fields also had a problem with Phytophthora root rot.

The statewide UCCE variety evaluation project averaged 43.5 tons/acre for the early season replicated variety trials and 37.9 tons/acre for the midseason maturity replicated trials. Early season replicated trial soluble solids (°Brix) averaged 5.0, the same as 2001. Soluble solids were also the same as in 2001 in the midseason replicated trials, averaging 5.2. Early season color in the replicated trials (26.3) was not as good as 2001 while color in the midseason replicated trials was 23.6, slightly better than 2001.

Results and Discussion

Eight counties (Sutter, Colusa, Yolo, San Joaquin, Contra Costa, Merced, Fresno and Kern) participated in the statewide variety evaluation studies this past season, conducting thirteen early and midseason trials. The four following tables represent summaries of yield and fruit quality from the 2002 Statewide UCCE Farm Advisor/Specialist Processing Tomato Variety Evaluation Project. These summaries were obtained from the computer trial data analysis done by Enrique Herrero, Staff Research Associate from UC Davis.

Table A represents yields and quality means from the Uniform Replicated Early Season Maturity Variety Trials. Results of four trials from Colusa, Yolo, Contra Costa/San Joaquin and Fresno Counties are contained in this analysis. Highest yield in the combined data was attained by H-1100 at 46.9 tons/acre, followed by H-9997 (45.6 tons/acre), H-1400 (45.1 tons/acre), H-9280 (45.0 tons/acre), APT 410 (44.8 tons/acre) and PS 816 (44.2 tons/acre). In terms of fruit quality, the top varieties in soluble solids (Brix) were PS 816, H-9998 and HyPeel 45 – all at 5.3, and CTRI 10-56 and H-1400, both at 5.2. Best color occurred with H-9997 (25.1), CXD 224 (25.7), H-9888 (25.8) and APT 410 (25.9). Best pH (acidity) levels occurred with PS 816 and CTRI 10-56 – both at 4.26, H-1400 (4.27), HyPeel 45 (4.28) and H-1100 and H-9888, both at 4.30. 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 Early Season Maturity Observational Variety Trials. Results of four trials from Colusa, Yolo, Contra Costa/San Joaquin and Fresno Counties are contained in this combined analysis. The highest yield in these trials occurred with AP 957 at 44.5 tons/acre, followed by H-9280 (39.9) tons/acre), Calista (39.1 tons/acre) and Sun 6358 (38.9 tons/acre). The top lines for soluble solids were Sun 6358 and HyPeel 45 – both at 5.2 and AP 957 and APT 410, both at 5.1. Varieties providing the best fruit color were APT 410 (24.0), Sun 6358 (25.5) and Calista and HyPeel 45 – both at 26.0. Best pH levels were shown by HyPeel 45 (4.29), H-9280 (4.30), AP 957 (4.32) and Sun 6358 (4.34).

Table C provides data from the Mid Season Maturity Replicated Trials. Results are shown for nine trials in 7 county locations (Colusa, Sutter, Yolo, San Joaquin, Merced, Fresno and Kern). Best combined yield was provided by H-9780 at 43.0 tons/acre, followed by PX 849 and H-8892 – both at 42.5 tons/acre, Sun 6324 (41.0) tons/acre) and H-9665 and CXD 222 – both at 40.5 tons/acre. Best soluble solids were achieved by CXD 221 (5.5), CTRI 10-56 (5.4), AP 938 (5.4), Sun 6324 (5.3), Halley 3155 (5.3) and HM-0830 (5.3). Varieties giving the best fruit color were H-9998 (22.6), H-2501 (22.8), CTRI 10-56 (23.0), Sun 6324 (23.0), and H-8892 (23.1). Best pH levels were demonstrated by H-9780 (4.31), PX 849 (4.33), H-9665 (4.34) and CXD 222 and Halley 3155 – both at 4.35.

Table D shows data summarized for the Mid Season Maturity Observation Variety Trials from 8 trials in seven county locations (Colusa, Sutter, Yolo, San Joaquin, Merced, Fresno and Kern). Highest combined yield occurred with U 729 at 44.3 tons/acre, followed by BOS 24675 (43.1 tons/acre), H-9995 (42.8 tons/acre), ENP 113 42.4 tons/acre), NDM-0098 (41.2 tons/acre) and Sun 6340 (41.1 tons/acre). In terms of fruit quality, the best lines for soluble solids (°Brix) were PS 296 (5.6), AB 405 (5.5), CXD 207 (5.5), H-2801 (5.4), CXD 208 (5.4), H-9995 (5.3) and HM 1851 (5.3). Best fruit color was provided by CXD 207 (21.8), H-1300 (21.9), H-2801 (22.0), CXD 208 (22.4), AB 405 (22.4), HM 1852 (22.8), U 922 (22.8), and H-9995 (22.8). Best pH levels occurred with PS 296 (4.26), H-9995 (4.27), HyPeel 347 (4.31), Sun 6340 (4.32), H-1300 (4.35) and AB 405 (4.35).

Table A. 2002 Processing Tomato Early Season Maturity Variety Trials
Combined Yield and Quality Data
Replicated Variety Trials
Four Locations: Colusa, Yolo, Contra Costa/San Joaquin and Fresno Counties

Variety	Yield (Tons/Acre)	°Brix	Brix Yield (Tons/Acre)	PTAB Color	pH
H-1100	46.9 a	4.9	2.31	27.8	4.30
H-9997	45.6 ab	4.7	2.12	25.1	4.35
H-1400	45.1 ab	5.2	2.33	26.1	4.27
H-9280	45.0 ab	4.4	1.97	26.9	4.32
APT 410	44.8 ab	4.9	2.16	25.9	4.32
PS 816	44.2 bc	5.3	2.32	26.4	4.26
HyPeel 45	41.8 cd	5.3	2.23	26.5	4.28
H-9888	41.6 d	5.3	2.20	25.8	4.30
CXD 224	40.9 d	4.9	2.01	25.7	4.35
CTRI 10-56	39.4 d	5.2	2.05	26.6	4.26
Mean	43.5	5.0	2.17	26.3	4.30
LSD @ 5%:	2.6	0.2	0.15	1.2	0.04
C.V. (%) =	8.5	5.5	9.9	6.5	1.0
Variety x Location: LSD @ 5%	5.2	N.S.	0.30	N.S.	N.S.

Table B. 2002 Processing Tomato Early Season Maturity Variety Trials
Combined Yield and Quality Data
Observation Variety Trials
Four Locations: Colusa, Yolo, San Joaquin/Contra Costa, and Fresno Counties

Variety	Yield (Tons/Acre)	°Brix	Brix Yield (Tons/Acre)	PTAB Color	pH
AP 957	44.5	5.1	2.25	26.5	4.32
H-9280	39.9	4.5	1.78	26.5	4.30
Calista	39.1	4.6	1.79	26.0	1.38
Sun 6358	38.9	5.2	1.98	25.5	4.34
HyPeel 45	38.6	5.2	2.00	26.0	4.29
APT 410	36.6	5.1	1.85	24.0	4.38
Mean	39.6	4.9	1.93	25.8	4.34
LSD @ 5%:	N.S.	0.3	N.S.	N.S.	N.S.
C.V. (%) =	15.7	3.9	15.8	7.1	1.3

Table C. 2002 Processing Tomato Mid Season Maturity Variety Trials
Combined Yield and Quality Data
Replicated Variety Trials
Nine Locations: Colusa, Yolo, Sutter, San Joaquin, Merced,
Fresno and Kern Counties

Variety	Yield (Tons/Acre)	°Brix	Brix Yield (Tons/Acre)	PTAB Color	pH
H-9780	43.0 a	5.2	2.18	24.1	4.31
PX 849	42.5 a	5.0	2.10	24.4	4.33
H-8892	42.5 a	4.9	2.05	23.1	4.36
Sun 6324	41.0 ab	5.3	2.16	23.0	4.44
H-9665	40.5 ab	4.8	1.94	24.1	4.34
CXD 222	40.5 ab	5.2	2.09	24.0	4.35
CXD 215	39.5 bc	5.0	1.95	24.3	4.41
Halley 3155	37.7 cd	5.3	1.98	23.6	4.35
H-2601	37.7 cd	5.0	1.86	24.1	4.41
HM 0830	37.0 cd	5.3	1.96	23.8	4.42
H-2501	36.9 cde	5.1	1.85	22.8	4.36
CXD 221	35.5 de	5.5	1.95	23.9	4.41
AP 938	34.3 ef	5.4	1.84	23.3	4.39
H-9998	31.8 f	4.9	1.54	22.6	4.40
CTRI 10-56	28.0 g	5.4	1.47	23.0	4.38
Mean	37.9	5.2	1.93	23.6	4.38
LSD @ 5%:	2.7	0.2	0.14	0.5	0.03
C.V. (%) =	15.2	6.6	15.3	4.7	1.3
Variety x Location: LSD @ 5%	8.0	0.5	0.41	1.6	0.08

Table D. 2002 Processing Tomato Mid Season Maturity Variety Trials
Combined Yield and Quality Data
Observation Variety Trials
Eight Locations: Colusa, Yolo, Sutter, San Joaquin, Merced, Fresno and Kern Counties

Variety	Yield (Tons/Acre)	°Brix	Brix Yield (Tons/Acre)	PTAB Color	pH
U 729	44.3 a	5.0	2.19	23.8	4.39
BOS 24675	43.1 ab	4.8	2.06	25.0	4.37
H-9995	42.8 ab	5.3	2.19	22.8	4.27
ENP 113	42.4 ab	5.1	2.17	23.2	4.38
NDM 0098	41.2 abc	5.0	2.04	23.8	4.40
Sun 6340	41.1 abc	4.9	1.98	22.9	4.32
PS 296	40.6 abc	5.6	2.17	24.0	4.26
H-1300	40.4 abc	4.9	1.94	21.9	4.35
HyPeel 347	39.7 abc	5.0	1.94	23.6	4.31
U 447	38.7 abc	5.2	1.96	23.4	4.38
AB 405	37.5 abcd	5.5	1.94	22.4	4.35
U 922	36.9 bcde	5.2	1.81	22.8	4.42
HM 1852	36.3 bcdef	5.2	1.81	22.8	4.38
H-2801	36.3 bcdef	5.4	1.91	22.0	4.38
CXD 208	34.9 cdef	5.4	1.84	22.4	4.47
Sun 6119	34.2 cdef	5.1	1.74	25.4	4.38
HM 1851	30.7 def	5.3	1.60	25.9	4.56
La Rossa	29.8 ef	5.0	1.48	23.3	4.38
CXD 207	29.6 f	5.5	1.53	21.8	4.46
Mean	37.9	5.2	1.93	23.3	4.38
LSD @ 5%:	7.7	0.3	0.34	1.1	0.06
C.V. (%) =	18.1	6.2	18.1	4.7	1.3

This is a report of work in progress only. The chemicals and uses contained in this publication are experimental data and should not be considered as recommendations for use.

Until the products and their uses given in this report appear on a registered pesticide label or other legal, supplementary direction for use, it is illegal to use the chemicals as described.

WARNING ON THE USE OF CHEMICALS

Pesticides are poisonous. Always read and carefully follow all precautions and safety recommendations given on the container label. Store all chemicals in their original labeled containers in a locked cabinet or shed, away from food or feeds, and out of the reach of children, unauthorized persons, pets, and livestock.

Recommendations are based on the best information currently available, and treatments based on them should not leave residues exceeding the tolerance established for any particular chemical. Confine chemicals to the area being treated. **THE GROWER IS LEGALLY RESPONSIBLE** for residues on his crops as well as for problems caused by drift from his property to other properties or crops.

Consult your County Agricultural Commissioner for correct methods of disposing of leftover spray material and empty containers. Never burn pesticide containers.

PHYTOTOXICITY

Certain chemicals may cause plant injury if used at the wrong stage of plant development or when temperatures are too high or when overcast conditions occur. Injury may also result from excessive amounts or the wrong formulation or mixing incompatible materials. Inert ingredients such as wetters, spreaders, emulsifiers, diluents, and solvents, can cause plant injury. Since formulations are often changed by manufacturers, it is possible that plant injury may occur, even though no injury was noted in previous seasons.

No endorsement of named products is intended, nor is criticism implied of similar products which are not mentioned.

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