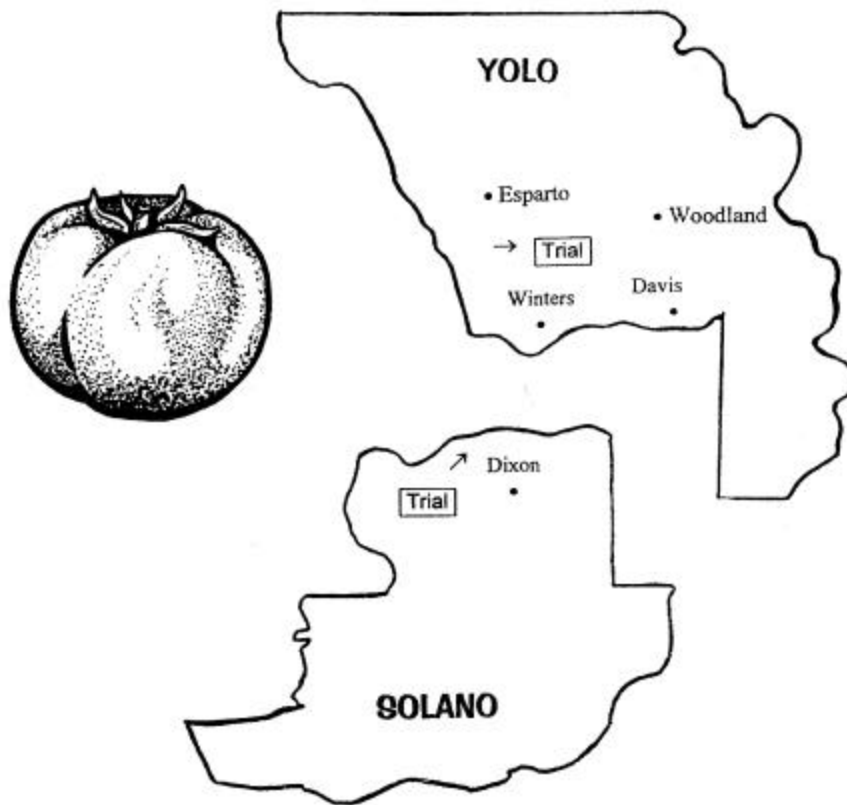


1999 Processing Tomato Variety Trials



UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

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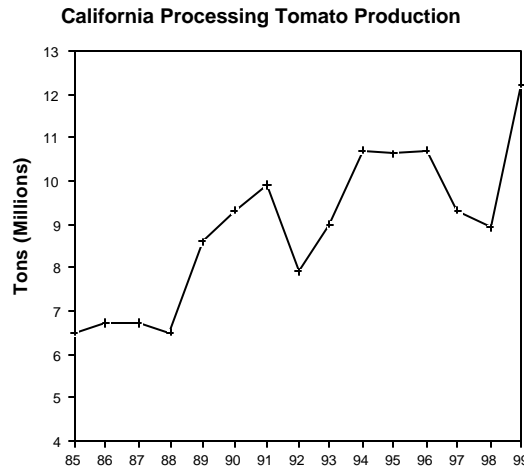
**Summary of Yolo/Solano Counties
1999 Processing Tomato Variety Evaluation Trials**

by

Gene Miyao, UC Farm Advisor
Daniel Scherer, Field Assistant, Yolo County

California growers delivered over 12.2 million tons of tomatoes to processors in 1999. Moderate temperatures during fruit set aided the record production. With the cooler than normal temperatures, harvest was delayed, but favorably dry weather extended into the late fall harvest period.

Pest pressure was generally low season long. While concern over late blight remained high, we experienced very few outbreaks, as rainy weather conditions were limited.



Evaluation of varieties for local adaptation continued to be a part of the University of California farm advisor program. Our objective was to identify dependable, higher yielding and higher quality variety releases that can be grown over a wide geographic area under varying environmental conditions. The varieties were compared side-by-side in an experimentally sound designed test within local counties. Tests were conducted in a uniform fashion to compare local results with tests by UC farm advisors in other locations.

Entries:

Varieties were selected in consultation with processors and seed companies.

The early-maturity trial included 12 replicated and 15 observational varieties (table 1A). Variety standards were Heinz 9280, HyPeel 45, Heinz 8773 and Brigade. The presence of genetic-based pest resistance to nematode and speck has increased among the new releases compared to historical standards. With the exception of Brigade, all of the varieties in this test were nematode resistant, and the majority was bacterial speck resistant.

In the mid-maturity trials, 18 replicated and 28 observational varieties were planted (table 1B). Mid-maturity standards were Heinz 8892, Halley, Brigade and the pear-shape standard, La Rossa. Of the 46 varieties, all but 5 had nematode resistance and about half had bacterial speck resistance.

Locations:

Our local variety evaluation program included two trials: one early-maturity trial near Winters with Button and Turkovich Ranches and one mid-maturity trial northwest of Dixon with J.H. Meek and Sons.

Other UC tests were conducted by farm advisors representing Colusa, Sutter/Yuba, San Joaquin, Contra Costa, Stanislaus, Merced and Fresno counties.

Methods:

Both local trials were direct seeded with a tractor-mounted, research-plot planter into 100' plots. Selected varieties were planted in each of 4 blocks while an additional group of observational varieties was planted in single plots. All cultural practices in these ~1 acre experimental sites were those of the cooperating grower and matched management of the remaining larger area of their commercial tomato field. Field meetings were held at each trial site as fruit ripened to provide an opportunity to examine the performance of the varieties in side-by-side comparisons.

For fruit quality comparisons, near the date of mechanical harvest, ~7 pound sample of red ripe, non-defect fruit was sent to a local inspection station of the Processing Tomato Advisory Board. Color and °brix (soluble solids) were determined by PTAB with a procedure consistent with grading of grower loads. Additionally, similar samples were submitted to the UC Davis Food Science and Technology Department to evaluate processing quality.

To measure yield, fruit was harvested into special weigh trailers using the grower's harvesting equipment and crew. A 5-gallon volumetric sample of unsorted fruit was taken from the mechanical harvester to evaluate fruit defects.

Analysis of variance statistical methods were used to help interpret the data. Combined statewide trial results provided information on variety adaptability across a range of conditions. Combined data from non-replicated individual trial sites allowed analysis between locations. Non-replicated data should be viewed with much less confidence.

EARLY-MATURITY EVALUATION: WINTERS (LOCAL) AND STATEWIDE

Early-maturity varieties were evaluated in a Button and Turkovich field near Winters. We planted on Feb 27 into single seed lines per bed in a class 2 soil (Table 2A). Emergence was slow and extended over 30 days. Plants grew slowly at first, but later developed well. The trial was harvested on August 7, a few days later than optimal, as the trial was nested around mid maturity Heinz 9382.

REPLICATED ENTRIES:

Table 5A-1 early replicated—local: All of the varieties yielded well in the test with a trial average of 40.8 tons per acre. The highest yielding varieties in the test were CXD 187 with 46.3 tons/acre and Sun 6235 with 44.4 tons per acre.

HyPeel 45, Sun 6235 and Red Century 32 were the highest soluble solids varieties with 5.4, 5.2 and 5.1%, respectively. The trial average was 4.8%.

Fruit color was fair. The best-colored group included 8 varieties led by CXD 204, recording 23.0 on the PTAB Agtron color scale.

Table 5A-2 early replicated—sort-out of culls: Harvest was slightly delayed. Percent pink and green fruit are listed as variety averages only as analysis of variance did not follow normal statistical distributions. Percent sunburn or mold damaged fruit was not significantly different amongst the varieties. Blossom end rot was not prevalent, but HyPeel 45 and HyPeel 280 had the highest levels with 1.2 and 0.8%, respectively.

Table 5B early replicated—yield statewide: In the combined analysis of statewide early replicated trials, average yield was 37.4 tons per acre. The highest yielding group was led by CXD 204 with 41.1 tons/acre and included FMX 1080N, H 9280, CXD 187 and H 9661. The Stanislaus site had high variation as indicated by coefficient of variation level (CV%) around 20. Location influence on variety performance (variety x location interaction) was significant.

Table 5C early replicated—brix and color statewide: Average soluble solids level was 4.8% in the statewide combined early trial. HyPeel 45 was clearly the superior soluble solids performer with 5.5%. Average comminuted color was 25.2 in the statewide combined led by CXD 204 with 24.6 and included Red Century 32 and AP 410 Location influence on variety performance (variety x location interaction) was also significant.

NON-REPLICATED ENTRIES

Table 6A early observational—local: The highest yielding variety in the local observational portion of the trial was AP 723 with 45.5 tons per acre. Several varieties had high soluble solids notably AB 97-453, PX 20816 and H 9888 with 6.3, 6.2 and 6.0% soluble solids. The standard, Brigade, measured 5.6%. Color averaged 24.5 with the best color of 22 from both CXD 206 and H 9552. Heinz 9552 and H 9888 had mold levels of 6 and 4%, respectively. Heinz 9881 was not an early variety in this location, with 20% of the fruit either pink or green at the time of harvest compared to Brigade with zero under-colored fruit.

Table 6B early observational—yield statewide: There was no statistical yield separation among the varieties when the tests were combined over the 4 locations. Two varieties within individual locations were noteworthy: PX 20816 yielded 67 tons per acre in the San Joaquin trial and AP 723 yielded 52 tons/acre in the Stanislaus trial compared to the trial average of 57 and 36 tons/acre, respectively.

Table 6C early observational—brix and color statewide: Soluble solids levels averaged 5.0% in the combined observational trials. The top soluble solids varieties were AB 97-453, PX 20816, H 9888, and FMX 1115NP with 5.8, 5.5, 5.4, and 5.3%, respectively. Ten of the 15 varieties were in the best color group led by Brigade with 21.8 color.

MID-MATURITY EVALUATION: WOODLAND (LOCAL) AND STATEWIDE

Our local mid-maturity trial with J.H. Meek and Sons northwest of Dixon was in a class 1, Yolo silty clay loam soil. Seeds were planted into moisture on March 30 in single seed lines per bed. Seedlings

emerged by April 18 (Table 2B). Irrigation method was with sprinklers up to layby, and thereafter irrigated utilizing furrows. Plants grew well during the season. The trial was harvested on September 9. Crop yield was higher than anticipated.

REPLICATED ENTRIES

Table 7A Mid replicated—local: Yields averaged 48.6 tons per acre. Heinz dominated the top-yielding group with 5 of the 8 varieties led by H 9553 with 54.1 tons per acre. Included in the top yielding group were H 9557, H 9665, HyPeel 303, Sun 6229, H 8892, H 9492 and HyPeel 65 with yields of 49 tons per acre or more.

Soluble solids averaged 5.1%. Soluble solids differentiation was limited with 13 of the 18 varieties in the top group, led by CXD 179 and AB P721, both with 5.4%. Halley, also in the top group, averaged soluble solids of 5.3%. Twelve of the 18 varieties were in the top color group led by H 9553 with 22.8 on the Agtron scale.

Sunburn levels were highest with AB P721 and CXD 179 with 7 and 6%, respectively. Mold levels, primarily blackmold, were high. Variety U 573 had the highest incidence of mold with 15%, followed by the next high mold group of APX 539 and BOS 20/20 with 12 and 10%, respectively. Nine of the 18 varieties were in the lowest mold group led by H 9665 with 1%. There was no statistical difference amongst the varieties for blossom end rot.

Table 7B mid replicated—yield statewide: Top yielding group of varieties was dominated by Heinz with H 9492, H 9553, H 8892 and H 9665 but included AB P721, all yielding over 44 tons per acre. Variation in the hand-harvested Merced trial was high with a CV of 21%. The location influence on variety performance was significant.

The yield performance amongst the varieties in 1999 was more similar than different. The lowest yielding variety was about 70% of the highest yielding variety. This might be akin to a grower averaging 40 tons per acre over the entire season, with the lowest yielding field producing 32 tons and the highest producing 46 tons. This similarity amongst varieties may be a result of our favorable 1999 climate as well as the overall quality of breeding programs to release competitively yielding varieties with wide adaptation.

The exceptional conditions of our 1999 season also extended into the late season production period. Colusa and San Joaquin tests, harvested in mid to late October, both averaged 38 tons per acre. The expected norm for yields from October harvested fields would be below the statewide average.

Of the 6 trials, all were planted on single seed lines per bed with the exception of the San Joaquin trial.

Table 7C mid replicated—brix and color statewide: The high soluble solids varieties were CXD 179, AP 539, AB P721 and HyPeel 65 each with 5.2% and Halley with 5.1%. The Sutter trial combined good yields with high soluble solids. Color leaders were AP 539 with 22.4 Agtron color as well as H 9492 and H 9553, both with 22.5.

NON-REPLICATED ENTRIES

Table 8A: mid observational—local: The highest yielding variety was our standard, Brigade, with 45.6 tons per acre.

High soluble solids performer was a Cornell University variety, TA 1533, with 6.0%. CXD 207 had best Agron color with 21. High sunburn levels were also recorded with several Campbell lines including CXD 203, CXD 188 and CXD 207 with 14, 11, and 10%, respectively. Mold levels were also high. CXD 207, U 9411 and U 570 had levels of mold of 18, 15, and 14%, respectively.

Table 8B mid observational—yield statewide: Poor statistical separation could be made amongst the 27 observational varieties evaluated statewide, with 20 varieties in the same high yielding group, led by CXD 188 with 44.7 tons/acre. Exceptionally high comparative yields were achieved with PX 41816 in Sutter with 51.4 tons/acre; OSX 395 and OSX 388 in Merced with 53 and 54 tons, respectively; and with CXD 188 and NDM 551 in Fresno with 58 and 62 tons, respectively.

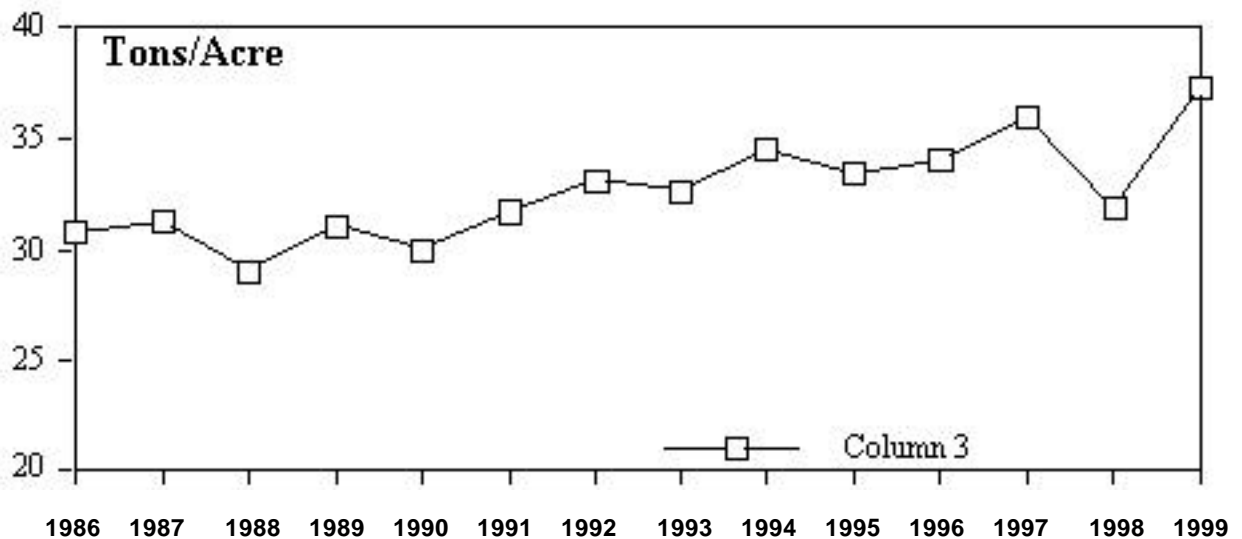
Table 8C mid observational—brix and color statewide: TA 1534, NDM 551, AB 97-405, FMX 1114N and Sun 6270 were the top soluble solids varieties with 5.5, 5.4, 5.3, 5.3, 5.3%, respectively.

Campbell with CXD 207 and CXD 188 had the best color with 21.2 and 22.3, respectively.

End Note:

The variety selection score card for the industry is a complex weighted scale of many different factors, many of which are outside the scope of this evaluation. I hope this report assists growers, processors and the seed people with variety selections. The strength of the farm advisor report is in side-by-side comparisons of varietal yields in a commercial setting across a range of conditions. The ultimate test of variety performance is commercial scale success on individual farms over a number of seasons.

California Processing Tomato Yield



1999 year based on 12.2 million tons per estimated 327,000 acres.

Table 1A. Early Maturity Entries, 1999 Statewide UC Processing Tomato Variety Trial, Button and Turkovich Ranches, Winters.

COMPANY	12 REPLICATED	15 OBSERVATIONAL
1 AB Seeds		AB 97-453 \$VFFNP
2 Asgrow	APT 403 \$VFFNP ASG 410 \$VFFNP	AP 723 \$VFFNP Brigade \$VFF
3 Campbell Soup	CXD 187 \$VFFNP CXD 204 \$VFFNP	CXD 206 \$VFFNP
4 Harris Moran	FMX 1080N \$VFFN	FMX 1115NP \$VFFNP
5 Heinz	H 9280 \$VFFNP H 9661 \$VFFNP	H 8773 \$VFFN H 9552 \$VFFN H 9881 \$VFFNP H 9888 \$VFFNP
6 Orsetti Seed Co.	Red Century 32 \$VFFNP	BOS 351 \$VFFNP
7 Petoseed	HyPeel 45 \$VFFNP HyPeel 280 \$VFFNP	PX 28016 \$VFFNP PX 1817 \$VFFNP
8 R&D Consulting		ES-911 \$VFFNP
9 Rogers Novartis		RPT 2332 \$VFFN
10 SunSeeds	Sun 6235 \$VFFN Sun 6287 \$VFFNP	
11 United Genetics, Inc		ENP 113 \$VFFNP

BOLD LETTERS = trial standards

Code: Disease Resistance and Hybrid Status

¢	= OPEN POLLINATED
\$	= HYBRID
V	= VERTICILLIUM WILT RESISTANT
F	= RACE 1 FUSARIUM WILT RESISTANT
FF	= RACE 1 AND 2 FUSARIUM WILT RESISTANT
FFF ₃	= RACE 1, 2 AND 3 FUSARIUM WILT RESISTANT
N	= ROOT KNOT NEMATODE RESISTANT (SOME SPECIES)
P	= BACTERIAL SPECK RESISTANT

Check with seed company to confirm disease resistance.

Table 1B. Mid-Maturity Varieties, 1999 UC Processing Tomato Variety Trial, JH Meek and Sons, Dixon area test

COMPANY	18	REPLICATED	28	OBSERVATIONAL
1 AB Seed LTD		AB P721 \$VFFN		AB 97-405 \$VFFNP
2 Asgrow		APX 539 \$VFF		Brigade \$VFF APX 391 \$VFFNP
3 Campbell Soup		CXD 179 \$VFFN CXD 199 \$VFFNP		CXD 161 \$VFFF ₃ CXD 188 \$VFF CXD 203 \$VFFNP CXD 207 \$VFFN CXD 208 \$VFFN
4 Cornell Univ.				TA 1533 \$VF TA 1534 \$VFFNP
5 Del Monte (Nippon)				NDM 551 \$VFFN
6 Harris Moran				FMX 1114N \$VFFN
7 Heinz		H 8892 \$VFFN H 9491 \$VFFNP H 9492 \$VFN H 9553 \$VFFN H 9557 \$VFFNP H 9665 \$VFFNP		H 9663 \$VFFNP H 9773 \$VFFNP H 9775 \$VFFNP
8 Lipton		U 573 \$VFFNP		U 570 \$VFFN U 9411 \$VFFNP
9 Ochoa Seed				OSX 388 \$VFFN OSX 395 \$VFFN
10 Orsetti		Halley 3155 \$VFF BOS 20/20 \$VFFN BOS S-55 \$VFFN		
11 Petoseed		HyPeel 65 \$VFFNP HyPeel 303 \$VFFNP HyPeel 513 \$VFFN		PS 34716 \$VFFNP PX 41816 \$VFFNP
12 R & D Consulting				ES 1086 \$VFFNP
13 Rogers (Novartis)				La Rossa \$VFF
14 Sunseeds		Sun 6229 \$VFFN		Sun 6270 \$VFFNP Sun 6321 \$VFFNP Sun 6337 \$VFFNP
15 United Genetics Seeds				Gibraltar 505 \$VFFNP UG 709 \$VFFNP

BOLD LETTERS = trial standards

Table 2A. Plot Specifications, Early-Maturity, Winters, 1999

Cooperator:	Tony Turkovich and Martin Medina, Button & Turkovich Ranches, Winters		
Location:	NE of Winters. ~0.6 miles north of Russell Blvd (State Highway 128), adjacent to north side of Dry Slough and east of Interstate 505. SW 1/4 of NW 1/4, Section 14, T8N, R1W, MDM. SCS sheet #66.		
Field Variety:	Heinz 9382, single seed line on 5'-centered beds.		
Plot Design:	Randomized complete block, 4 reps with additional non-replicated plots adjacent to 1st rep. All individual plots 500 square feet, 100' x 5'.		
Planting Date:	Feb 27, into high soil moisture.		
Stand establishment:	March 24th		
Field Meeting:	July 27		
Fruit Quality Sample:	August 2 nd , UCD Food Science Project August 3 rd , PTAB		
Harvest:	August 7th		
Soil type:	Rincon silty clay loam, class 2, Storie Index 73.		
Soil Sample	O-1 foot depth (two samples)	A	B
	PH (low pH)	5.8	5.8
	EC	0.9	2.1
	P (ppm)	51	25
	K exchangeable (meq/100 g)	1.0	0.8
	Ca exchangeable (meq/100 g)	11.4	14.2
	Mg exchangeable (meq/100 g)	7.5	8.9
	NH ₄ -N	15	10
	NO ₃ -N (ppm)	16	11
Fertilizer/Acre:	20 gpa 8-24-6 plus quart 5% zinc chelate at planting ~150 lb. N as UN 32, sidedressed at layby		
Previous Crop:	1998, sunflower for seed		
Irrigation method:	furrow, Clear Lake Irrigation District water source		
General:	Slow start. Good growth thereafter. Fruit sized well.		

Table 2B. Plot Specifications, Mid-Maturity, Dixon, 1999

Cooperator:	Steve Meek and John Pon, J.H. Meek and Sons, Woodland		
Location:	NW Dixon, SE Winters area ~1/2 mile north of Sievers Road, ~1/4 mile east of Garnett Road T8N, R1E, MDM. SCS sheet #2.		
Field Variety:	AP 127, single rows, on beds with 5' centers		
Plot Design:	Randomized complete block with 4 reps and additional non-replicated plots adjacent to 1st rep. Individual plot sizes, each 500 square feet.		
Planting Date:	March 30, 1999 into moisture followed by rainfall and sprinklers		
Visible Stand:	April 18, 1999		
Fruit Quality Sample:	August 30 for UCD Food Science Sept 2 for PTAB		
Field Meeting:	August 20th		
Harvest:	Sept 9		
Soil type:	Yolo silty clay loam, class 1, Storie Index 90.		
Soil Sample:	March 30, 1999	0-1'	1-2'
	pH	6.6	6.75
	EC	0.46	0.57
	Zn ppm	2.4	1.3
	P (ppm)	30	20
	K exchangeable (meq/100 g)	0.9	0.7
	Ca exchangeable (meq/100 g)	9.8	9.8
	Mg exchangeable (meq/100 g)	13.0	13.1
	NO ₃ -N	10	15
Fertilizer per Acre:	15 gallons 10-34-0 under the seed line 150 lb. N from UN 32, sidedressed at thinning plus 150 lbs of 11-52-0		
Previous Crops:	wheat 1998		
Irrigation method:	sprinkler through early seedling stage, furrow after layby		
General:	Fair emergence and growth through vegetative period. Crop developed well.		

TABLE 3A. FIELD NOTES, EARLY-MATURITY TRIAL, WINTERS, 1999

COMPANY VARIETY	DISEASE RESISTANCE HYBRID/OP	FRUIT SHAPE	VINE SIZE		CANOPY COVER GOOD 10 POOR 1	MATURITY*	COMMENTS
			LARGE 10	SMALL 1			
<u>AB Seeds</u>							
AB 97-453	\$VFFNP	rnd, sqr	10	7		mid-early	floppy vine, exposed, jointless
<u>Asgrow</u>							
APT 403	\$VFFNP	square	8	8		mid-early	fair cover
ASG 410	\$VFFNP	square	8+	8		mid-early	
AP 723	\$VFFNP	square	8+	8		mid early	good set, cover
BRIGADE	\$VFF	square	9	7		mid-early	leaves desiccated near harvest
<u>Campbell Soup</u>							
CXD 187	\$VFFNP	rd & sqr	9	8+		mid-early	yellow shoulder, good set, moldy?
CXD 204	\$VFFNP	square	8+	8		mid early	
CXD 206	\$VFFNP	square	8+	9		mid early	good vine, stems, split set?
<u>Harris Moran</u>							
FMX 1080N	\$VFFN	square	8	7		mid-early	sunburn
FMX 1115NP	\$VFFNP	square	8	7		mid-early	
<u>Heinz</u>							
H 8773	\$VFFN	square	6	6+		early	earliest, small vine, exposed, conc. set
H 9280	\$VFFNP	square	8	8		mid early	
H 9552	\$VFFN	round	9	7		mid early	jointless?, exposed, rots, some stems
H 9661	\$VFFNP	square	8	7+		mid early	exposed fruit
H 9881	\$VFFNP	square	8+	5		mid	jointless, small fruit, exposed, conc. set
H 9888	\$VFFNP	round	8+	6		mid early	sunburn, stemmy
<u>Orsetti Seed Co.</u>							
Red Century 32	\$VFFNP	square	9+	8		mid early	tall, floppy vine
BOS 351	\$VFFNP					pear, large	8 7 mid-early
<u>Petoseed</u>							
HYPEEL 45	\$VFFNP	square	9-	8		mid-early	elongated, floppy vine, later maturity
HyPeel 280	\$VFFNP	square	8	8		mid-early	large fruit
PX 1817	\$VFFNP	square	9	6		mid early	exposed, jointless, large firm fruit
PX 20816	\$VFFNP	sqr, small	8+	6		mid early	no mold, plant collapse- root rot?
<u>R & D Consulting</u>							
ES-911	\$VFFNP					square	8+ 7 mid early larger fruit, firm

COMPANY VARIETY	DISEASE	FRUIT SHAPE	VINE	CANOPY	MATURITY*	COMMENTS
	RESISTANCE		SIZE	COVER		
	HYBRID/OP		LARGE 10 SMALL 1	GOOD 10 POOR 1		
<u>Rogers (Novartis)</u>						
RPT 2332	\$VFFN				square 8 7	mid early jointless, ok vine
<u>Sunseed Genetics</u>						
SUN 6235	\$VFFN				square 9+	8 mid-early
SUN 6287	\$VFFNP				square 7+	8 mid-early
<u>United Genetics Seeds</u>						
EARLYNEMAPRIDE 113	\$VFFNP				square, small 9+	8 <u>mid</u> early small fruit

* underline indicates the predominant trait

example: mid early is more mid-maturity

Check with seed company to confirm disease resistance.

TABLE 3B. FIELD NOTES, MID-MATURITY TRIAL, DIXON, 1999.

COMPANY VARIETY	DISEASE RESISTANCE HYBRID/OP	FRUIT SHAPE	VINE SIZE		CANOPY COVER	MATURITY*	COMMENTS
			LARGE 10 SMALL 1	GOOD 10 POOR 1			
<i>AB Seed LTD</i>							
AB P721	\$VFFN	square	10	8-	8-	mid early	
AB 97-405	\$VFFNP	mixed	10	8+	8+	mid-late	elongated, tall vine, off-types
<i>Asgrow</i>							
APX 391	\$VFFNP	square	8+	8-	8-	mid	
APX 539	\$VFF	square	10	8	8	mid	large, tall vine
BRIGADE	\$VFF	square	9	8	8	mid-early	some earliness
<i>Campbell Soup</i>							
CXD 161	\$VFFF ₃	square	9+	8+	8+	mid	good canopy, stems, Fusarium wilt Race 3
CXD 179	\$VFFN	square	8+	7	7	mid	
CXD 188	\$VFF	square	7+	7	7	mid	tall vine, twin row?, conc. set
CXD 199	\$VFFNP	square	9	8+	8+	mid-late	tall vine
CXD 203	\$VFFNP	square	8+	7-	7-	mid	jointless, small puffy fruit, exposed, some BER
CXD 207	\$VFFN	plum	9	7+	7+	mid	upright vine, stems?
CXD 208	\$VFFN	square	10	7	7	mid	large fruit, stems, mold, large vine
<i>Cornell University</i>							
TA 1533	\$VF	square/plum	10	8	8	mid	sprawling vine, firm fruited
TA 1534	\$VFFNP	square	10	8	8	mid	
<i>Nippon Del Monte</i>							
NDM 551	\$VFFN	square	10	7	7	mid late	sprawling vine, later
<i>Harris Moran</i>							
FMX 1114N	\$VFFN	SQUARE	7+	8	8	MID-LATE	LATER, FLOPPY VINE
<i>Heinz</i>							
H 8892	\$VFFN	square	10	8+	8+	mid	good vine, jointless
H 9491	\$VFFNP	SQUARE	9	7+	7+	MID	LARGE, JOINTLESS FRUITED
H 9492	\$VFN	PLUM, SMALL	10	7-	7-	MID-LATE	SMALL, FIRM FRUIT, SPRAWLING SPARSE VINE
H 9553	\$VFFN	SQUARE	10	7	7	MID	TALL, RANK VINE, HIGH YIELD
H 9557	\$VFFNP	SQUARE	9+	8+	8+	MID-LATE	GOOD VINE, JOINTLESS, VERY FIRM FRUIT
H 9663	\$VFFNP	SQUARE	10	9-	9-	MID	NICE VINE, LATER
H 9665	\$VFFNP	SQUARE	10	7+	7+	MID-LATE	LATER?
H 9773	\$VFFNP	1/2 LONG SQ	10	9	9	MID LATE	VINY, JOINTLESS
H 9775	\$VFFNP	1/2 LONG	10	7	7	MID-LATE	LARGE LEAF, POOR COVER, ELONGATED VINE

COMPANY VARIETY	DISEASE RESISTANCE HYBRID/OP	FRUIT SHAPE	VINE SIZE	CANOPY COVER	MATURITY*	COMMENTS
			LARGE 10 SMALL 1	GOOD 10 POOR 1		
<u>Lipton</u>						
U 570	\$VFFN	LONG SQR	8	7-	MID-EARLY	EARLY, PEAR, 2 ROW, FLOP, MOLD
U 573	\$VFFNP	SQUARE	8	7	MID-EARLY	TWIN ROW?, EARLINESS
U 9411	\$VFFNP	SQUARE, LRG	8	8-	MID	TWIN ROW?, EXPOSED, FLOPPY VINE
<u>Ochoa Seed Co.</u>						
OSX 388	\$VFFN	SQUARE	9+	8-	MID	LARGE VINE, LARGE FRUIT
OSX 395	\$VFFN	SQUARE	10	8	MID-LATE	SPRAWLING VINE, SOME MIX OF YELLOW FRUIT
<u>Orsetti Seed Co.</u>						
BOS 20/20	\$VFFN	SQUARE	9+	8	<u>MID</u> -LATE	TALL PLANT
BOS S-55	\$VFFN	SQUARE	8	8+	MID	
HALLEY (3155)	\$VFF	SQUARE	8	8+	MID-LATE	TALL VINE
<u>Petoseed</u>						
HyPeel 65 (6514)	\$VFFNP	SQUARE	9	9-	MID-LATE	TALL PLANT, LATER MATURITY
HyPeel 303 (30315)	\$VFFNP	SQUARE	9	9-	MID-LATE	
HyPeel 513 (51314)	\$VFFN	SQUARE	8	8	MID	
PS 34716	\$VFFNP	PEAR, LARGE	9+	9	MID	
PX 41816	\$VFFNP	PEAR, LARGE	8	9	MID	TALL, FLOPPY VINE
<u>R & d Consulting</u>						
ES 1086	\$VFFNP	SQUARE	10	8-	MID	TALL, FLOPPY VINE, EXPOSED
<u>Rogers</u>						
LA ROSSA	\$VFF	PEAR	8	7	MID EARLY	FRUIT EXPOSED, EARLINESS
<u>Sunseed Genetics</u>						
Sun 6229	\$VFFN	PEAR	8+	8+	MID-LATE	
Sun 6270	\$VFFNP	SQUARE	11	8	MID-LATE	TALL ROBUST VINE, LATE
Sun 6321	\$VFFNP	SQUARE	10	9	<u>MID</u> EARLY	SPRAWLING VINE
SUN 6337	\$VFFNP	SQUARE	11	9+	MID LATE	SPRAWLING VINE, LATE, GOOD COLOR
<u>United Genetics Seeds</u>						
UG 709	\$VFFNP	SQUARE	8	8	<u>MID</u> -EARLY	TALL, FLOPPY VINE
Gibraltar 505	\$VFFNP	PEAR, LARGE	9	8+	MID	JOINTLESS

* underline indicates the predominant trait

example: mid early is more mid-maturity

Check with seed company to confirm disease resistances.

Table 5A-1. Winters, Replicated, Early-Maturity: Yield, solids and color from processing tomato harvest (single row per bed), Button and Turkovich Ranches, 1999.

VARIETY	Yield		°Brix	PTAB	
	Ton/A			Color	
1 CXD 187	46.3	A	4.7	23.8	
2 Sun 6235	44.4	A B	5.2	24.5	
3 CXD 204	42.1	B C	4.8	23.0	
4 ASG 403	41.8	B C	4.7	25.0	
5 FMX 1080N	41.4	B C	4.7	25.8	
6 Red Century	40.7	C D	5.1	23.3	
7 HyPeel 45	40.5	C D	5.4	26.3	
8 HyPeel 280	40.2	C D	4.8	23.8	
9 H 9280	39.4	C D E	4.6	23.5	
10 ASG 410	39.1	C D E	5.0	24.0	
11 H 9661	37.1	D E	4.5	23.8	
12 Sun 6287	36.2	E	4.7	24.0	
LSD @ 0.05=	3.6		0.4	1.4	
% C.V.=	6		5	4	
Average	40.8		4.8	24.2	

Table 5A-2. Winters, Replicated, Early-Maturity: Fruit sort out from processing tomato harvest (single row per bed), Button and Turkovich Ranches, 1999.

VARIETY	%	%	% sun	%	%	
	pink	green	burn	mold	BER	
1 CXD 187	4	3	1	3	0.0	D
2 Sun 6235	3	2	2	2	0.6	BC
3 CXD 204	4	5	2	2	0.6	BCD
4 ASG 403	4	1	1	2	0.0	D
5 FMX 1080N	2	3	2	2	0.1	CD
6 Red Century 32	4	2	1	2	0.2	CD
7 HyPeel 45	7	2	1	1	1.2	A
8 HyPeel 280	3	2	1	2	0.8	AB
9 H 9280	2	2	1	4	0.0	D
10 ASG 410	4	3	1	1	0.0	D
11 H 9661	4	4	1	2	0.1	CD
12 Sun 6287	4	5	0	1	0.1	CD
LSD @ 0.05=	NA	NA	NS	NS		
% C.V.=			99	69	117	

NA - did not fit statistical analysis of variance test criteria (for normal distribution of variance).

Table 5B. Yields, Early Replicated, Combined Statewide by Location, Processing Tomato Variety Evaluation, 1999

VARIETY	Yield			Yolo	Stanislaus	Colusa
	tons/A					
1 CXD 204	41.1	A		42.1	38.9	42.5
2 FMX 1080N	40.4	A B		41.4	38.5	41.4
3 H 9280	39.7	A B C		39.4	35.4	44.2
4 CXD 187	39.3	A B C		46.3	30.6	40.8
5 H 9661	37.9	A B C D		37.1	35.0	41.7
6 Sun 6235	37.4	B C D E		44.4	27.3	40.3
7 HyPeel 45	36.8	B C D E		40.5	35.6	34.4
8 HyPeel 280	36.6	C D E		40.2	29.8	39.9
9 Red Century 32	36.6	C D E		40.7	33.1	36.0
10 ASG 410	34.5	D E		39.1	24.0	40.4
11 APT 403	34.3	D E		41.8	27.2	33.9
12 Sun 6287	34.1	E		36.2	30.6	35.4
Average	37.4			40.8	32.2	39.2
LSD @ 0.05=	3.7			3.6	N.S.	5.1
C.V.=	12			6	20	9
Variety X Location						
LSD @ 0.05=	6.4					
				single row	single row	double row

Table 5C. °Brix, Early Replicated, Combined Statewide by Location, & Statewide Combined Color, Processing Tomato Variety Evaluation, 1999

Variety	°Brix		Yolo	Stanislaus	Colusa	Statewide
						Color
1 HyPeel 45	5.5	A	5.4	5.6	5.6	26.3
2 Red Century 32	5.1	B	5.1	5.0	5.2	23.8
3 AP 410	5.1	B	5.0	5.0	5.3	24.2
4 Sun 6235	5.0	B	5.2	4.9	4.9	25.0
5 HyPeel 280	4.9	B	4.8	4.9	5.1	24.8
6 AP 403	4.7	C	4.7	4.7	4.9	25.8
7 FMX 1080N	4.7	C	4.7	4.6	4.9	26.6
8 CXD 204	4.7	C D	4.8	4.7	4.6	23.6
9 Sun 6287	4.7	C D E	4.7	4.6	4.7	25.3
10 CXD 187	4.6	C D E	4.7	4.8	4.5	24.9
11 H 9280	4.5	D E	4.6	4.5	4.6	25.8
12 H 9661	4.5	E	4.5	4.5	4.5	26.2
Average	4.8		4.8	4.8	4.9	25.2
LSD @ 0.05=	0.2		0.4	0.3	0.3	1.2
C.V.=	5		5	5	5	6
Variety X Location						
LSD @ 0.05=	0.3					2.0

Table 6A. Winters, Non-Replicated, Early-Maturity: Yield, fruit quality, and defects at harvest from processing tomato test, (single seed line per bed) Button and Turkovich Ranches, 1999.

Variety (Observational)	Yield tons/A	°Brix	PTAB color	% #1 reds	% pink	% green	% sun burn	% mold	% BER
1 AP 723	45.5	4.5	25	92	1	1	4	2	0.0
2 H 9881	42.3	4.4	25	78	13	7	1	1	0.0
3 ENemaPride 113	42.2	5.2	27	90	4	3	4	0	0.0
4 CXD 206	39.7	5.3	22	90	5	3	0	1	0.4
5 AB 97-453	39.5	6.3	24	94	4	0	0	0	1.2
6 ES-911	39.2	4.9	23	92	2	3	2	3	0.0
7 RPT 2332	38.1	5.3	26	95	1	0	0	2	1.3
8 BOS 351	38.0	5.2	25	89	4	3	4	1	0.0
9 FMX 1115NP	37.8	5.6	24	92	3	1	2	3	0.0
10 H 8773	37.7	4.6	27	92	1	3	2	3	0.0
11 Brigade	37.3	5.6	23	95	0	0	2	1	0.9
12 PX 1817	36.0	5.8	27	91	5	1	2	0	0.8
13 ASG 410	35.9	5.7	24	93	2	1	2	2	0.0
14 H 9888	35.2	6.0	24	92	1	1	1	4	0.4
15 H 9552	33.8	5.1	22	90	3	1	0	6	0.0
16 PX 20816	32.8	6.2	24	96	1	1	2	0	0.4
Average	38.2	5.4	24.5	91	3	2	2	2	0.3
H 9382 (grower's field planting)	37.2	5.4	23	95	2	2	1	0.0	0.8

Data is non-replicated and should be viewed with much less confidence than replicated tests.

Table 6B. Yields, Early Maturity, Observational, Statewide Combined x Location, 1999

Variety	Combined				
	Yield Tons/A	Colusa	Yolo	San Joaquin	Stanislaus
1 AP 723	42.7	18.5	45.5	54.7	52.0
2 PX 20816	40.8	25.7	32.8	67.3	37.5
3 CXD 206	40.6	26.1	39.7	55.0	41.6
4 FMX 1115NP	38.8	30.5	37.8	59.2	27.7
5 EarlyNemaPride 113	38.5	27.0	42.2	55.0	29.7
6 H 8773	37.7	31.4	37.7	45.9	35.8
7 H 9881	37.7	27.7	42.3	45.9	34.8
8 RPT 2332	37.7	24.0	38.1	53.4	35.2
9 ES-911	37.5	26.1	39.2	50.5	34.1
10 Brigade	37.2	27.9	37.3	48.9	34.8
11 H 9552	36.0	24.6	33.8	53.1	32.5
12 BOS 351	35.6	18.9	38.0	47.9	37.5
13 PX 1817	34.8	24.2	36.0	47.1	31.8
14 AB 97-453	34.3	15.7	39.5	—	33.7
15 H 9888	33.9	20.9	35.2	40.4	39.2
Average	37.4	24.6	38.3	51.7	35.9
LSD @ 0.05=	N.S.				
C.V.=	14.0				

Table 6C. °Brix, Early, Observational, Combined Statewide by Location & Combined Color, 1999

Variety	Combined		Colusa	Yolo	San Joaquin	Stanislaus	Statewide Color
	°Brix						
1 AB 97-453	5.8	A	6.0	6.3	—	5.3	23.1
2 PX 20816	5.5	A B	5.5	6.2	4.4	5.8	22.8
3 H 9888	5.4	A B	5.6	6.0	5.0	4.9	22.8
4 FMX 1115NP	5.3	A B C	5.2	5.6	5.0	5.2	24.0
5 RPT 2332	5.2	B C D	5.7	5.3	4.4	5.2	24.5
6 H 9552	5.1	B C D E	5.4	5.1	4.8	5.2	23.8
7 PX 1817	5.1	B C D E	5.3	5.8	4.6	4.8	24.3
8 Brigade	5.1	B C D E	4.7	5.6	5.0	5.0	21.8
9 CXD 206	5.0	B C D E F	5.5	5.3	5.0	4.3	23.5
10 BOS 351	5.0	B C D E F	5.5	5.2	4.2	5.2	24.3
11 ENemaPride 113	4.9	C D E F G	5.1	5.2	4.4	4.7	23.3
12 H 8773	4.7	D E F G	4.8	4.6	4.6	4.7	22.3
13 ES-911	4.6	E F G	4.5	4.9	4.4	4.7	22.5
14 H 9881	4.5	F G	4.6	4.4	4.8	4.3	26.3
15 AP 723	4.5	G	4.2	4.5	4.4	4.9	22.8
Average	5.0		5.2	5.3	4.6	4.9	23.5
LSD @ 0.05=	0.5						2.1
C.V.=	7.0						6.4

Data is non-replicated and should be viewed with much less confidence than replicated tests.

Table 7A. Woodland, Replicated, Mid-Maturity: Yield, fruit quality and defects from processing tomato variety trial with JH Meek and Sons, Dixon, 1999.

VARIETY	Yield Tons/A		°Brix	PTAB Color	%pink &green	% sun	% mold	% BER
1 H 9553	54.1	A	4.9	22.8	3	1	3	0
2 H 9557	53.6	A B	5.2	23.5	9	1	6	1
3 H 9665	53.3	A B	4.9	24.5	5	2	1	0
4 HyPeel 303	53.1	A B	5.0	25.3	7	2	6	1
5 Sun 6229	52.0	A B C	5.1	25.8	6	3	4	1
6 H 8892	51.9	A B C	5.1	24.5	5	2	8	0
7 H 9492	49.9	A B C D	5.2	23.8	4	2	3	0
8 HyPeel 65	49.0	A B C D	5.3	26.8	7	2	3	0
9 BOS 20/20	48.4	B C D	5.2	24.8	6	2	10	0
10 AB P721	48.4	B C D	5.4	24.3	2	7	8	0
11 CXD 199	47.4	C D	5.2	25.0	8	3	6	1
12 H 9491	47.2	C D	5.1	24.8	4	4	5	2
13 Halley	47.2	C D	5.3	26.0	7	1	3	0
14 BOS S-55	46.9	C D	5.3	27.3	4	3	4	0
15 HyPeel 513	45.8	D	4.6	24.8	5	2	2	0
16 CXD 179	45.2	D	5.4	24.5	3	6	7	0
17 APX 539	44.7	D	5.2	23.8	3	2	12	0
18 U 573	37.2	E	4.9	24.5	2	4	15	1
LSD @ 0.05=	5.6		0.3	2.1	2.8	2.7	3.7	NS
% C.V.=	8		4	6	39	71	44	39
Average	48.6		5.1	24.8	5	3	6	0.4

Table 7B. Yields, Mid-Maturity, Replicated, Combined Statewide x Location, 1999.

Variety	Yield		San						
	tons/A		Colusa	Sutter	Yolo	Joaquin	Merced	Fresno	
1 H 9492	46.6	A	46.6	48.6	49.9	37.3	44.1	53.0	
2 H 9553	46.0	A	42.1	49.1	54.1	42.8	33.4	54.6	
3 H 8892	45.3	A	40.3	47.4	51.9	42.1	33.0	57.2	
4 H 9665	44.5	A B	38.9	50.1	53.3	39.1	33.9	51.8	
5 AB P721	44.5	A B	42.7	44.2	48.4	43.7	35.4	52.5	
6 HyPeel 303	42.6	B C	38.7	43.1	53.1	36.3	32.3	52.3	
7 H 9491	42.6	B C	39.6	44.1	47.2	40.3	33.2	51.2	
8 CXD 179	42.5	B C	39.5	43.8	45.2	37.5	34.0	55.2	
9 Sun 6229	42.3	B C D	35.1	46.0	52.0	36.9	29.8	54.2	
10 BOS 20/20	41.9	C D E	33.7	45.0	48.4	36.0	35.3	52.9	
11 Halley 3155	41.3	C D E	35.4	42.2	47.2	36.6	37.4	49.1	
12 HyPeel 65	41.2	C D E	36.1	39.4	49.0	37.7	36.6	48.5	
13 H 9557	41.1	C D E	34.0	41.1	53.6	36.5	32.1	49.5	
14 CXD 199	41.1	C D E	36.3	44.1	47.4	35.9	32.8	50.1	
15 AP 539	40.9	C D E	37.1	40.9	44.7	38.3	34.7	49.8	
16 HyPeel 513	40.4	C D E	32.3	46.3	45.8	37.7	28.4	51.6	
17 U 573	40.1	D E	40.8	38.8	37.2	37.9	35.7	50.3	
18 BOS S-55	39.9	E	33.9	44.6	46.9	37.2	29.5	47.2	
Average	42.5		38.0	44.4	48.6	38.3	34.0	51.7	
LSD @ 0.05=	2.3		4.7	4.9	5.6	3.3	N.S.	4.1	
C.V.=	9.7		8.7	7.8	8.0	6.1	21.0	5.6	
Variety X Location	5.8								
LSD									
#Seed lines/bed			single	single	single	double	single	single	

Table 7C. Brix, Mid-Maturity, Replicated, Combined Statewide x Location, and Combined Statewide Color, 1999

Variety	°Brix	San							Statewide Color
		Colusa	Sutter	Yolo	Joaq	Merced	Fresno		
1 CXD 179	5.2 A	5.4	5.8	5.4	5.0	4.9	4.8	23.5	
2 AP 539	5.2 A	5.5	5.8	5.2	5.0	4.9	4.7	22.4	
3 AB P721	5.2 A	5.1	5.8	5.4	5.2	4.9	4.8	23.3	
4 HyPeel 65	5.2 A B	5.4	6.0	5.3	5.1	4.6	4.5	24.9	
5 Halley 3155	5.1 A B C	5.3	5.5	5.3	4.9	5.0	4.5	24.4	
6 BOS 20/20	5.0 B C D	5.2	5.7	5.2	4.8	4.6	4.6	24.5	
7 H 9557	5.0 C D E	5.0	5.6	5.2	5.0	4.8	4.4	23.2	
8 CXD 199	4.9 D E F	5.1	5.4	5.2	4.7	4.5	4.6	23.5	
9 BOS S-55	4.9 D E F G	5.3	5.4	5.3	4.6	4.5	4.5	25.6	
10 Sun 6229	4.9 D E F G H	5.0	5.6	5.1	4.9	4.4	4.5	25.3	
11 H 9492	4.9 E F G H I	5.0	5.3	5.2	4.8	4.6	4.3	22.5	
12 H 9665	4.8 F G H I J	4.9	5.7	4.9	4.3	4.6	4.3	23.9	
13 H 9553	4.8 G H I J	4.9	5.5	4.9	4.5	4.5	4.4	22.5	
14 H 9491	4.8 H I J	4.9	5.4	5.1	4.5	4.4	4.2	23.4	
15 H 8892	4.7 I J	4.8	5.4	5.1	4.3	4.4	4.4	23.3	
16 HyPeel 303	4.7 J K	4.6	5.4	5.0	4.5	4.4	4.2	24.3	
17 U 573	4.6 K L	4.4	5.5	4.9	4.1	4.1	4.3	24.6	
18 HyPeel 513	4.5 L	4.8	5.3	4.6	4.4	4.1	4.0	24.2	
Average	4.9	5.0	5.5	5.1	4.7	4.6	4.4	23.9	
LSD @ 0.05=	0.1	0.3	N.S.	0.3	0.4	0.2	0.4	0.8	
C.V.=	5.0	4	6	4	6	4	6	6	
Variety X	0.3							1.9	
Location LSD									

Table 8A. Woodland, Non-Replicated, Mid-Maturity: Yield, fruit quality and defects from processing tomato variety test, Jack Meek and Sons, Dixon, 1999-

	Yield		PTAB	% #1	%	%	%	%	%	%
	tons/A	°Brix	color	brix	reds	pink	green	sun burn	mold	BER
1 Brigade	45.6	5.1	23	5.1	87	1	2	4	6	0.8
2 CXD 203	41.9	5.2	23	5.2	74	0	1	14	9	1.6
3 CXD 207	40.3	5.4	21	5.4	70	0	1	10	18	0.4
4 CXD 208	43.1	5.5	22	5.5	82	0	3	2	13	0.0
5 NDM 551	47.2	5.4	24	5.4	92	1	2	0	6	0.0
6 TA 1533	41.7	6.0	28	6.0	89	0	2	5	4	0.4
7 TA 1534	41.4	5.5	24	5.5	82	1	1	4	12	0.0
8 Sun 6270	50.8	5.1	25	5.1	89	4	3	3	2	0.0
9 PS 34716	53.5	5.0	24	5.0	81	2	5	3	8	0.4
10 PX 41816	46.3	4.9	25	4.9	81	0	1	7	9	2.6
11 CXD 188	45.6	5.0	23	5.0	74	2	1	11	11	0.8
12 FMX 1114N	40.8	5.0	26	5.0	82	5	6	4	1	0.4
13 OSX 395	51.2	4.8	29	4.8	82	1	5	4	8	0.0
14 H 9775	54.6	5.0	25	5.0	89	5	2	2	2	0.0
15 U 9411	32.9	4.7	26	4.7	79	0	0	6	15	0.0
16 AB 97-405	47.8	5.4	25	5.4	76	2	3	9	8	0.9
17 H 9663	50.9	4.6	28	4.6	86	4	3	2	4	0.4
18 OSX 388	50.5	4.8	26	4.8	83	1	2	3	11	0.0
19 UG 709	49.7	5.0	27	5.0	87	1	0	6	6	0.0
20 La Rossa	39.5	4.9	25	4.9	83	1	2	3	9	2.3
21 Sun 6321	49.7	4.6	25	4.6	81	3	5	2	9	0.0
22 Gibraltar 505	50.9	4.8	26	4.8	86	5	3	5	1	0.4
23 APX 391	47.9	4.4	27	4.4	85	2	3	2	9	0.0
24 CXD 161	44.7	4.9	25	4.9	81	3	1	5	11	0.0
25 ES-1086	50.8	5.4	25	5.4	84	0	2	5	8	0.0
26 U 570	39.5	4.8	24	4.8	83	1	2	0	14	0.0
27 H 9773	52.5	4.6	25	4.6	87	4	3	1	5	0.0
28 Sun 6337	51.5	4.8	23	4.8	85	5	3	0	1	0.0
Average	46.5	5.0	25	5.0	83	2	2	4	8	0.4

Data is non-replicated and should be viewed with much less confidence than replicated tests.

Table 8B. Yields, Mid-Maturity, Observational, Combined Statewide x Location, 1999

Variety	Yield		San					
	Tons/A		Colusa	Sutter	Yolo	Joaq	Merced	Fresno
1 CXD 188	44.7	A	39.4	46.2	45.6	41.7	37.0	58.3
2 H 9775	44.3	A B	38.8	42.2	54.6	35.4	41.6	53.2
3 H 9663	44.2	A B	38.3	40.7	50.9	37.4	43.2	54.9
4 AB 97-405	43.5	A B C	41.6	42.4	47.8	41.7	30.9	56.6
5 OSX 395	42.8	A B C D	29.8	40.2	51.2	34.7	53.1	47.5
6 OSX 388	42.6	A B C D	34.4	30.1	50.5	37.2	54.2	49.2
7 CXD 207	41.7	A B C D E	40.5	47.7	40.3	32.7	36.9	52.0
8 NDM 551	41.4	A B C D E	34.8	29.7	47.2	35.2	39.2	62.2
9 PX 41816	41.2	A B C D E	31.6	51.4	46.3	36.4	31.9	49.8
10 Sun 6270	41.1	A B C D E	31.6	35.6	50.8	37.6	44.5	46.4
11 FMX 1114N	41.0	A B C D E	34.6	39.2	40.8	33.8	44.4	53.2
12 AP 391	41.0	A B C D E	41.4	34.8	47.9	37.3	28.9	55.4
13 CXD 203	40.6	A B C D E	36.8	41.5	41.9	33.3	41.8	48.7
14 Sun 6337	40.2	A B C D E	26.1	39.7	51.5	32.8	40.6	50.3
15 CXD 208	40.2	A B C D E	39.2	35.6	43.1	36.2	39.3	47.5
16 Brigade	39.4	A B C D E	40.3	29.3	45.6	41.5	30.9	48.7
17 PS 34716	39.3	A B C D E	30.1	42.3	53.5	36.7	26.8	46.4
18 ES-1086	39.3	A B C D E	25.5	34.9	50.8	37.0	37.0	50.3
19 Sun 6321	39.2	A B C D E	37.9	34.3	49.7	37.6	25.7	49.8
20 UG 709	38.4	A B C D E	28.3	29.3	49.7	31.8	38.7	52.6
21 U 9411	38.0	B C D E F	37.7	26.6	32.9	35.1	45.7	49.8
22 CXD 161	38.0	B C D E F	34.2	24.2	44.7	39.0	37.0	48.7
23 U 570	37.3	C D E F	40.7	33.5	39.5	33.6	35.3	41.3
24 Gibraltar 505	36.8	D E F	29.8	45.0	50.9	32.0	20.8	42.4
25 H 9773	35.9	E F	30.3	26.3	52.5	32.9	31.5	41.9
26 La Rossa	35.7	E F	29.8	33.3	39.5	33.2	33.3	—
27 TA 1534	31.5	F	34.0	23.6	41.4	33.3	20.8	36.2
Average	39.9		34.7	36.3	46.7	35.8	36.7	49.7
LSD @ 0.05=	6.5							
C.V.=	14.3							
TA 1533			33.1	—	41.7	36.0	—	26.6

Data is non-replicated and should be viewed with much less confidence than replicated tests.

Table 8C. Brix, Mid-Maturity, Observational, Combined Statewide x Location, and Statewide Combined Color, 1999

Variety	°Brix		Col usa	Sut ter	Yolo	San Joaq	Mer ced	Fres no	State Wide Color
1 TA 1534	5.5	a	5.5	6.5	5.5	6.0	4.6	—	23.4
2 NDM 551	5.4	a b	5.6	6.5	5.4	5.2	4.6	5.1	23.7
3 AB 97-405	5.3	a b c	5.0	6.0	5.4	5.5	5.0	5.0	23.0
4 FMX 1114N	5.3	a b c d	5.2	6.6	5.0	5.8	4.6	4.6	24.2
5 Sun 6270	5.3	a b c d e	5.4	6.5	5.1	4.9	5.0	—	23.4
6 CXD 207	5.2	b c d e f	5.0	6.0	5.4	5.1	4.8	4.8	21.2
7 CXD 208	5.1	b c d e f g	5.0	5.7	5.5	4.9	4.8	4.9	22.5
8 ES-1086	5.1	b c d e f g	5.2	6.0	5.4	4.6	4.7	4.9	24.2
9 CXD 161	5.1	b c d e f g h	5.0	6.7	4.9	5.0	4.7	4.4	23.8
10 Sun 6337	5.1	b c d e f g h	5.2	6.5	4.8	4.9	4.7	4.6	22.7
11 H 9773	5.1	c d e f g h i	4.9	6.6	4.6	5.0	5.1	4.3	23.3
12 Gibraltar 505	5.0	d e f g h i j	5.0	6.0	4.8	4.7	4.9	—	23.8
13 PX 41816	5.0	e f g h i j k	4.8	5.8	4.9	4.7	4.6	5.1	23.3
14 PS 34716	4.9	f g h i j k l	4.6	6.3	5.0	4.5	4.7	—	23.4
15 Brigade	4.9	f g h i j k l	4.8	6.4	5.1	4.3	4.6	4.3	22.8
16 OSX 388	4.9	f g h i j k l	4.7	6.1	4.8	4.9	4.5	4.4	24.3
17 OSX 395	4.9	f g h i j k l m	5.0	5.5	4.8	4.9	4.7	4.4	24.5
18 U 570	4.8	g h i j k l m	5.0	6.0	4.8	4.7	4.2	4.3	23.0
19 CXD 188	4.8	h i j k l m	4.8	5.5	5.0	4.9	4.2	4.5	22.3
20 H 9775	4.8	i j k l m	4.7	5.7	5.0	4.5	4.5	4.4	24.0
21 La Rossa	4.8	i j k l m	4.8	5.6	4.9	4.7	4.4	—	24.4
22 UG 709	4.8	j k l m	4.3	6.5	5.0	4.4	4.0	4.4	24.5
23 CXD 203	4.8	j k l m	4.7	5.2	5.2	4.6	4.4	4.5	23.2
24 Sun 6321	4.7	j k l m	4.7	6.3	4.6	4.3	4.0	4.5	22.7
25 AP 391	4.7	k l m	4.5	—	4.4	4.4	4.5	4.5	24.6
26 H 9663	4.7	l m	4.5	5.8	4.6	4.8	4.3	4.0	23.2
27 U 9411	4.6	m	—	5.6	4.7	4.8	3.8	4.1	24.3
Average	5.0		4.9	6.1	5.0	4.9	4.6	4.5	23.5
LSD @ 0.05	0.3								1.3
C.V.=	5.5								4.9
TA 1533		not in all trials	5.9	—	6.0	5.6	—	—	26.0

Data is non-replicated and should be viewed with much less confidence than replicated tests.

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