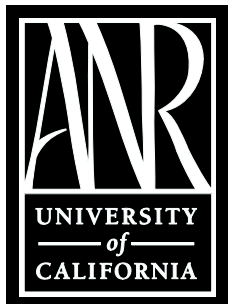


2009 PROCESSING TOMATO VARIETY TRIAL



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**2009 UCCE SAN JOAQUIN COUNTY
PROCESSING TOMATO VARIETY EVALUATION**

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TRANSPLANT PRODUCTION

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FUNDING

California Tomato Research Institute
Participating Seed Companies
California League of Food Processors (funding Barrett Lab T-4 project)

STATEWIDE PROJECT COORDINATION

Scott Stoddard, UCCE Merced County
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UC Statewide Variety Reports are available online at:

<http://vric.ucdavis.edu>

Electronic version of this report available online at:

<http://cesanjoaquin.ucdavis.edu>

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Cooperative Extension in Agriculture and Home Economics. U.S. Department of Agriculture, University of California and San Joaquin County Cooperating.

UC Cooperative Extension conducts a processing tomato variety evaluation program in which standardized trials are planted throughout the Central Valley. This year, seven trials were established by UC farm advisors from Yolo County in the north to Kern County in the south. The goal of these trials is to evaluate varieties for local adaptation and to identify varieties with high yield and fruit quality under a range of geographic areas and environmental conditions. Varieties for these trials were selected with input from California tomato processors and seed companies. The standard varieties included for comparison were AB 2, H 9780, H 2601 and Sun 6366.

The trial here in San Joaquin County was established from commercially-grown greenhouse transplants. The trial was transplanted on May 7th as a single row on 5-ft beds. Replicated varieties were planted in each of four replicate blocks, each 100 feet long. Observational varieties were planted only in a single block. The trial area of roughly one acre was surrounded on all sides by a commercial field of the variety H 2401. Cultural practices within the trial area are the same as those in the surrounding field. The field is irrigated by a buried drip system. Soil type at this location is class 1 Capay clay. Vine growth was very good through the season and pest and disease pressures were moderate. Harvest was delayed until September 30th, 146 days after transplanting, however fruit quality samples were taken at 124 and 131 days (see below).

On September 8th, a sample of marketable red fruit were hand-picked by the Barrett Lab from the UC Davis Food Science and Technology Department as part of their T-4 project evaluating processing quality. Results of their cooked analysis are available in a separate report. On September 15th, a second sample of marketable red fruit were hand-picked from each plot and delivered to the local inspection station of the Processing Tomato Advisory Board for analysis of color, soluble solids, and acidity.

Yield is measured by harvesting the entire plot into special weigh trailers using the grower's harvesting equipment and crews. Data collected from replicated varieties is subjected to analysis of variance to help interpret differences between varieties. Observational varieties are not replicated, and therefore data on these varieties should be viewed with much less confidence.

In this trial, yields averaged 55 tons per acre. The top three replicated varieties, all yielding over 60 tons, were the Heinz varieties H 8504, H 9780 (a trial standard), and H 4007 (table 2). Soluble solids yield was highest in HM 6898, followed by H 9780. Soluble solids were highest in HM 6898, PX 650 and N 6390. Best color was seen in varieties H 4007, CXD 282, and HM 6903. Varieties with the highest acidity were H 8504, HM 6898, and AB 2.

The range in yield was wider in the observational block varieties, but five entries yielded over 60 tons; H 5508, UG 19406, N 6385, BQ 205, and N 6393 (table 3). Highest soluble solids were measured in varieties N 6393, N 6394, and BQ 172.

Special thanks to our grower cooperator, Hal Robertson Farms, for their generous donation of land, labor and equipment and their fine management of the trial.

Table 1. Mid-maturity varieties, 2009 UCCE processing tomato variety trial, Tracy-area. Varieties in bold indicate trial standards.

Company	Replicated varieties (16)		Observational varieties (14)	
Campbell's Seeds	CXD 255	VFFNP	CXD 269	VFFNP
	CXD 282	VFFFNP		
Harris Moran	HM 6898	VFFNP		
	HM 6903	VFFNP		
	HM 7883	VFNP		
	HMX 7885	VFFNP		
Heinz Seed	H 2601	VFFNP	H 5508	VFFN SW
	H 4007	VFFNP	H 5608	VFFNP SW
	H 8504	VFFNP		
	H 9780	VFFNP		
Hytec Seeds			HT 1059	VF TYLC
Nunhems USA	N 6390	VFFNP	N 6385	VFFNP SW
	SUN 6366	VFFNP	N 6393	VFFN
			N 6394	VFFNP SW
Orsetti Seed			BOS 8800	VFFN
Seminis	AB 2	VFFP	DRI 0309	VFFNP SW
	AB 3 (DRI0303)	VFFNP		
	PX 002	VFFN SW		
	PX 650	VFFNP		
United Genetics			UG 4305	VFFN
			UG 19406	VFFNP
Woodbridge Seeds			BQ 163	VFFNP
			BQ 172	VFFNP
			BQ 205	VFFNP

DISEASE RESISTANCES (check with seed company to confirm disease resistance)

V = Verticillium wilt race 1

FFF = Fusarium wilt races 1 & 2 & 3

N = Root knot nematode (some species)

P = Bacterial speck race 0

SW = Tomato spotted wilt virus

TYLC = Tomato yellow leaf curl virus

Table 2. Yield and fruit quality, 2009 UCCE processing tomato variety trial, Tracy-area.

Variety	Yield (tons/A)		Soluble solids (° Bx)	PTAB color	pH
H 8504	65.6	a	4.7	21.25	4.32
H 9780 (std)	63.6	ab	5.0	21.75	4.42
H 4007	60.3	bc	4.9	20.25	4.58
HM 6898	58.8	cd	5.5	21.25	4.37
HM 7883	57.8	cde	5.2	22.25	4.61
CXD 255	57.8	cde	4.9	22.00	4.49
HMX 7885	57.7	cde	5.0	22.00	4.64
PX 650	55.7	def	5.4	23.50	4.53
N 6390	55.4	def	5.4	22.75	4.48
AB 3	54.5	efg	5.2	21.25	4.47
SUN 6366 (std)	53.0	fgh	5.1	21.75	4.55
CXD 282	51.9	fgh	4.8	20.00	4.46
AB 2 (std)	50.4	gh	5.1	21.75	4.41
H 2601 (std)	49.1	hi	5.0	21.75	4.48
PX 002	46.1	i	4.9	21.00	4.49
HM 6903	41.6	j	4.9	20.75	4.52
LSD (5%)	4.1		0.3	0.93	0.05
CV (%)	5.2		3.0	3.0	0.8
Average	55.0		5.1	21.60	4.49

Note: Yield means followed by the same letter are not statistically different. The significance of differences between means for fruit quality variables is determined by whether two means differ by more than the LSD value reported for that variable.

Table 3. Yield and fruit quality, non-replicated (observational) varieties.

Variety	Yield (tons/A)	Soluble solids (° Bx)	PTAB color	pH
H 5508	71.9	4.3	21	4.41
UG 19406	69.0	5.1	21	4.37
N 6385	64.3	4.5	22	4.55
BQ 205	63.1	5.3	22	4.47
N 6393	62.8	5.4	22	4.52
H 5608	59.9	4.8	21	4.52
BQ 163	56.2	5.2	21	4.48
DRI 0309	53.5	5.1	22	4.45
N 6394	52.6	5.4	21	4.58
UG 4305	44.8	5.2	22	4.52
CXD 269	44.3	5.1	22	4.44
BQ 172	41.4	5.4	20	4.58
BOS 8800	35.9	5	23	4.56
HT1059	no data	4.3	23	4.55
Average	55.4	5.0	21.6	4.50

Note: Observational varieties are not replicated and therefore data should be viewed with much less confidence.