

Statewide Processing Tomato Variety Trials - Fresno County Results - 2006

Michelle Le Strange, Farm Advisor, Tulare and Kings Counties

Three early and 7 mid-season variety evaluation tests were conducted throughout the major processing tomato production regions of California during the 2006 season. The major objective is to conduct processing tomato variety field tests that evaluate fruit yield, °Brix (soluble solids %), color, and pH in various statewide locations. The data from all test locations are used to analyze variety adaptability under a wide range of growing conditions. All major production areas had at least one test to identify tomato cultivars appropriate for that specific region.

These tests are designed and conducted with input from seed companies, processors, and other allied industry and are intended to generate information useful for making intelligent management decisions.

Procedures: Early maturity tests were planted in February or early March and mid-season lines were planted from March to May. New varieties are typically screened one or more years in non-replicated observational trials before being included in replicated trials. Tests were primarily conducted in commercial production fields with grower cooperators, however the Fresno trials were located at the UC West Side Research and Extension Center [WSREC] near Five Points.

Each variety was usually planted in one-bed wide by 100 foot long plots (Fresno used 75-foot plots). Plot design was a randomized complete block with four replications. The observational trial consisted of one non-replicated plot directly adjacent to the replicated trial. Seeding or transplanting was organized by the Farm Advisor at approximately the same time that the rest of the field was planted.

All cultural operations, with the exception of planting and harvest, were done by the grower cooperator using the same equipment and techniques as the rest of the field. All test

locations were primarily furrow irrigated. A field day or arrangements for interested persons to view the plots occurred at all of the tests.

2006 Conditions: Weather played a dominant role in the results of these trials this year. An extended cool and wet spring resulted in delayed planting in many locations, which was exasperated by a very hot summer. The mid season trials were particularly impacted by severe heat in July when daytime temps exceeded 100°F throughout the Central Valley for a period of about two weeks. This severe heat resulted in poor pollination and fruit set, and a drop in yield.

Most varieties in the mid season trial yielded less than 40 tons/acre in all locations, with the exception of Merced County which was drip irrigated. The early trials escaped most of the extreme heat and yielded very well in Yolo and Contra Costa Counties, averaging 48 and 55 tons/acre respectively. In the early trial, H5003, Sun 6366, BOS 66509, 66508, and APT 410 had significantly better yields than the other entries in this test; HyPeel 45 had the highest °Brix and lowest pH. Averaged across location, no significant differences were found in the mid-season observation trial for yield or Brix; in the replicated trial best yields occurred with DRI 8058 and Sun 6368, while Sun 6374 had significantly higher Brix than the other varieties.

Results: A complete research report is posted at the VRIC website www.vric.ucdavis.edu. Click on Vegetable Information, Choose Tomato as the crop, scroll down to other and click on 2006 Statewide Processing Tomato Variety Evaluation trials. OR call a Farm advisor and ask them to mail you a copy. Results from the Fresno trials are below.

Table 1: EARLY Season Processing Tomato Variety Trial - FRESNO County - 2006

Seeded: February 17, 2006
Irrigated: February 18, 2006
Emergence: March 13-17

Irrigation Cutoff: June 23, 2006
Machine Harvest: July 20, 2006
Plot size: One 66-inch bed x 73' row
Double plant rows/bed - 12" between plant rows

Code	VARIETY	Yield Tons/A		°Brix	PTAB Color	pH	% green	% rot + sunburn	lbs per 50 fruit
6	Sun 6366	38.7 (01)	A	6.1 (01)	29.3 (12)	4.31 (08)	15.3	18.2	7.6
2	H 5003	38.4 (02)	A	5.5 (07)	23.3 (02)	4.29 (06)	13.0	9.7	6.7
8	BOS 66509	36.4 (03)	A B	4.8 (12)	25.3 (04)	4.28 (04)	12.2	28.0	7.4
7	BOS 66508	35.5 (04)	A B	5.6 (06)	19.0 (01)	4.25 (03)	12.9	19.1	7.7
9	BOS 7026	34.3 (05)	B	5.6 (05)	27.5 (08)	4.28 (05)	11.6	25.5	8.0
10	APT 410	34.2 (06)	B	5.9 (04)	25.3 (04)	4.25 (02)	9.6	30.1	7.4
3	H 9280	34.1 (07)	B C	5.1 (11)	26.5 (07)	4.30 (07)	12.9	15.9	7.8
11	HyPeel 45	33.5 (08)	B C	6.0 (03)	27.8 (09)	4.20 (01)	17.1	21.3	7.4
4	U 250	33.4 (09)	B C	5.2 (10)	28.0 (10)	4.34 (10)	11.2	26.3	8.6
5	U 462	32.9 (10)	B C	5.4 (08)	26.3 (06)	4.34 (09)	6.6	37.8	7.9
1	HMX 5883	30.4 (11)	C D	5.3 (09)	28.8 (11)	4.34 (11)	13.3	24.7	8.3
12	PS 438	26.7 (12)	D	6.1 (02)	25.0 (03)	4.36 (12)	17.8	14.7	7.6
	AVERAGE	34.0		5.5	26.0	4.29	12.8	22.6	7.7
	LSD @ 5%	3.7		0.7	5.0	0.07	NS	12.8	NS
	C.V. %	7.6		8.7	13.3	1.1	36.7	39.5	9.8

Table 2: MID-Season Processing Tomato Variety Trial #1 - FRESNO County - 2006

Seeded: March 16, 2006
 Irrigated: March 17, 2006
 Emergence: April 3, 2006

Irrigation Cutoff: July 7, 2006
 Machine Harvest: August 10, 2006
 Plot size: One 66-inch bed x 73' row

Code	VARIETY	Yield Tons/A		°Brix	PTAB Color	pH	% green	% rot + sunburn	lbs per 50 fruit
15	PS 345	41.6 (01)	A	5.2 (14)	27.3 (15)	4.35 (06)	4.9	4.8	8.9
8	H 9780	41.3 (02)	A B	5.5 (10)	25.3 (09)	4.34 (05)	3.4	9.7	9.2
12	Sun 6368	40.1 (03)	A B C	5.7 (06)	25.5 (11)	4.40 (10)	3.8	8.6	7.9
14	BOS 67374	37.5 (04)	A B C D	5.7 (07)	24.3 (04)	4.32 (03)	3.6	12.0	8.7
7	H 8004	36.9 (05)	A B C D	5.6 (08)	26.3 (14)	4.35 (07)	7.0	7.4	8.5
3	DRI 8058	36.5 (06)	A B C D	5.6 (08)	24.0 (01)	4.39 (09)	6.5	14.9	8.1
10	U 886	36.3 (07)	B C D	5.3 (12)	24.0 (01)	4.48 (13)	3.9	14.7	8.5
2	DRI 4610	35.4 (08)	C D	6.1 (01)	24.8 (07)	4.31 (02)	5.2	10.2	8.4
5	H 2005	34.9 (09)	C D	5.8 (05)	25.0 (08)	4.48 (14)	3.0	12.6	8.3
6	H 2601	34.2 (10)	D E	5.1 (15)	25.5 (11)	4.47 (12)	3.6	13.2	8.4
1	AB 2	33.4 (11)	D E	6.0 (03)	24.3 (04)	4.29 (01)	4.2	10.8	8.9
16	PS 384	32.6 (12)	D E F	5.9 (04)	27.5 (16)	4.35 (08)	4.3	15.8	8.5
9	U 567	32.5 (13)	D E F	4.9 (16)	24.3 (04)	4.48 (15)	2.8	13.5	9.2
13	Sun 6374	32.4 (14)	D E F	6.1 (02)	25.3 (09)	4.32 (03)	4.8	14.6	7.8
4	HMX 4802	29.0 (15)	E F	5.3 (11)	25.5 (11)	4.46 (11)	4.7	17.7	8.6
11	Red Spring	27.4 (16)	F	5.2 (13)	24.0 (01)	4.52 (16)	5.2	30.8	8.1
AVERAGE		35.1		5.6	25.2	4.39	4.4	13.2	8.5
LSD @ 5%		5.3		0.4	1.9	0.06	NS	6.8	0.9
C.V. %		10.5		5.1	5.2	0.9	42.7	36.1	7.0

Table 3: MID-Season Processing Tomato Variety Trial #2 - FRESNO County - 2006

Seeded: May 4, 2006
 Irrigated: May 4, 2006
 Emergence: May 17, 2006

Irrigation Cutoff: August 11, 2006
 Machine Harvest: September 12, 2006
 Plot size: One 66-inch bed x 73' row

Code	VARIETY	Yield Tons/A		°Brix	PTAB Color	pH	% green	% rot + sunburn	lbs per 50 fruit
3	DRI 8058	38.8 (01)	A	5.1 (12)	22.8 (01)	4.45 (08)	13.6	10.3	8.4
12	Sun 6368	34.0 (02)	B	6.1 (02)	23.8 (04)	4.47 (12)	14.3	13.0	7.2
10	U 886	32.6 (03)	B C	5.2 (11)	23.5 (02)	4.46 (11)	19.3	9.1	7.9
6	H 2601	31.2 (04)	B C D	5.1 (15)	24.8 (10)	4.51 (13)	14.3	17.2	7.4
13	Sun 6374	30.3 (05)	C D E	6.2 (01)	23.8 (04)	4.43 (06)	18.7	13.4	7.3
15	PS 345	29.5 (06)	C D E	5.2 (09)	25.8 (13)	4.45 (09)	19.1	12.1	8.4
1	AB 2	29.3 (07)	C D E	5.6 (06)	24.3 (08)	4.34 (01)	15.8	12.6	7.6
5	H 2005	28.8 (08)	C D E	5.6 (04)	24.3 (08)	4.56 (14)	19.2	16.1	8.3
7	H 8004	28.2 (09)	D E F	5.6 (05)	23.5 (02)	4.45 (07)	22.2	14.0	7.1
16	PS 384	26.8 (10)	E F G	5.9 (03)	27.5 (16)	4.42 (05)	15.7	11.4	7.4
8	H 9780	24.9 (11)	F G H	5.2 (09)	25.8 (13)	4.42 (04)	34.2	4.2	8.5
9	U 567	24.8 (12)	F G H	5.1 (13)	25.0 (12)	4.45 (09)	15.1	17.4	7.8
14	BOS 67374	24.7 (13)	F G H	5.5 (07)	24.0 (06)	4.39 (02)	20.9	14.8	7.3
11	Red Spring	24.3 (14)	G H	5.1 (14)	24.8 (10)	4.57 (15)	20.8	22.4	7.5
2	DRI 4610	23.9 (15)	G H	5.0 (16)	24.0 (06)	4.41 (03)	20.6	10.6	7.7
4	HMX 4802	22.8 (16)	H	5.2 (08)	26.5 (15)	4.57 (16)	18.0	17.8	7.9
AVERAGE		28.4		5.4	24.6	4.46	18.9	13.5	7.7
LSD @ 5%		3.7		0.6	1.3	0.06	8.2	8.2	NS
C.V. %		9.3		7.5	3.8	1.0	30.5	42.6	9.2