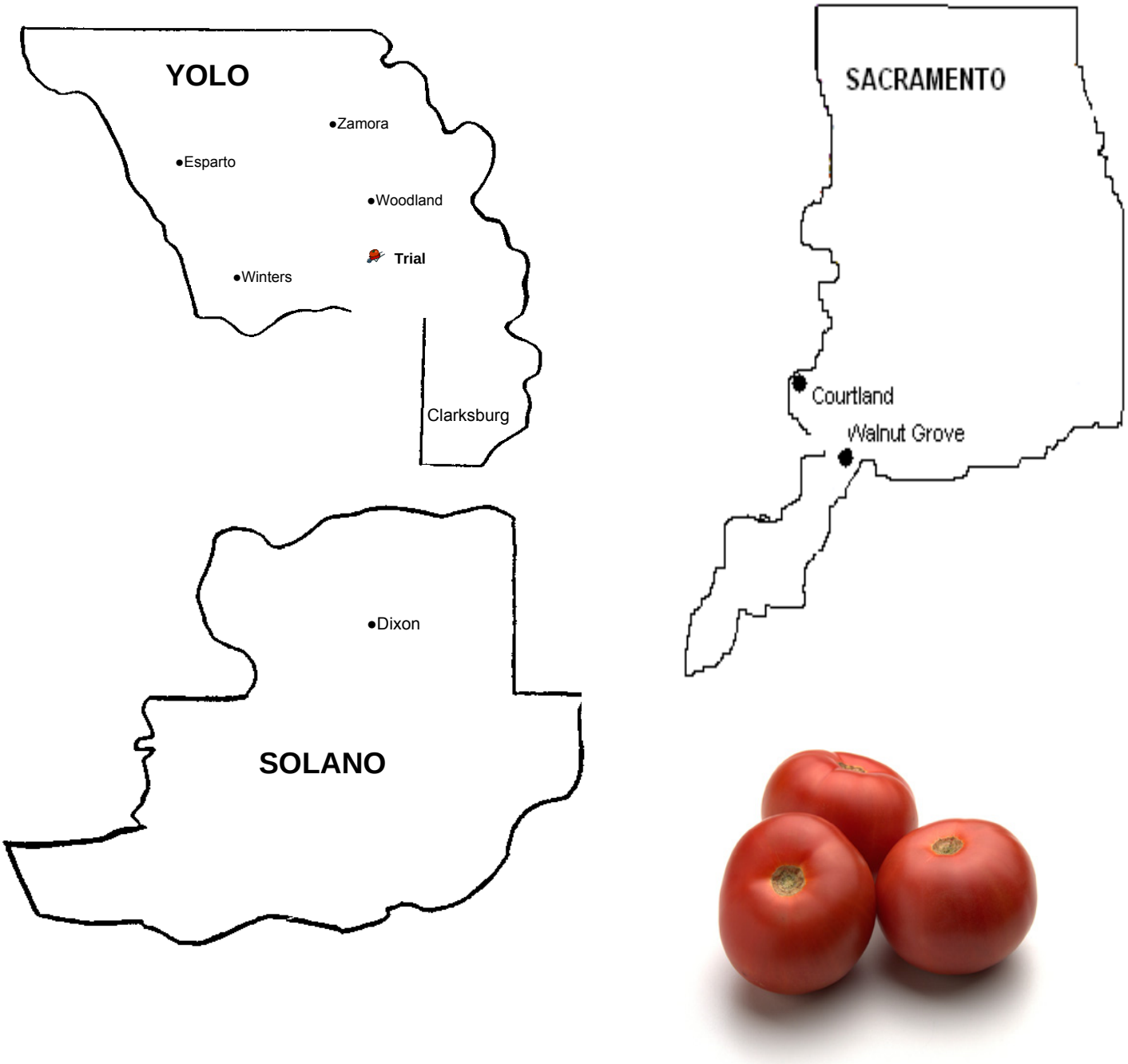
2010 Processing Tomato Variety Trials



University of California Cooperative Extension
70 Cottonwood Street
Woodland, CA 95695
(530) 666-8143

CONTRIBUTORS

GROWER COOPERATOR:
Special appreciation to our cooperating grower. Their generous donation of resources (management, land, labor and equipment) remains essential.
STEVE MEEK AND JOHN PON, J.H. Meek and Sons, Woodland

FIELD ASSISTANCE:
MARK KOCHI, Field Research Assistant, Yolo County

PROJECT COORDINATION:
UC ADVISORS SCOTT STODDARD (PROJECT LEADER), BRENNA AEGERTER, MICHELLE LE STRANGE, TOM TURINI AND JOE NUNEZ
DIANE BARRETT & SAM MATOBA, Food Science and Technology Department, UCD
TIM HARTZ, Vegetable Crops Specialist, UCD

FRUIT QUALITY EVALUATIONS:
TOM RAMME, RICHARD MONTGOMERY AND CREW, Processing Tomato Advisory Board
DIANE BARRETT, SAM MATOBA AND CREW, Food Science and Technology Department, UCD

TRANSPLANT SUPPORT:
ANDY PON & DANIEL ACEVEDO, WESTSIDE TRANSPLANTS
TIMOTHY, STEWART AND LEKOS SEED COMPANY, WOODLAND.

FUNDING SUPPORT:
CHUCK RIVARA AND THE CALIF. TOMATO RESEARCH INSTITUTE
SEED COMPANIES
CALIFORNIA LEAGUE OF FOOD PROCESSORS (PROCESSING STUDY COMPONENT, #T-4)

STATISTICAL ANALYSIS FOR STATEWIDE REPORT:
GAIL NISHIMOTO, Statistician
SCOTT STODDARD, VARIETY PROJECT COORDINATOR FOR UC

BOOKLET COMPILATION:
KATIE CHURCHILL, Secretary, Yolo County

Respectfully submitted,

Gene Miyao
Farm Advisor, Yolo/Solano/Sacramento counties
Dec 2010 105 copies

Cooperative Extension in Agriculture and Home Economics. US Department of Agriculture, University of California and Yolo County Cooperating.

TABLE OF CONTENTS

SUMMARY OF 2010 YOLO/SOLANO/SACRAMENTO COUNTY TRIALS 1-4

Table 1A. Mid-Maturity Variety Entries, Davis.....5

Table 1B. Disease Resistance Legend.....6

Table 2. Plot Specifications, Mid-Maturity, Davis/Woodland.....7

Table 3. Fruit Quality Factor Definitions.....8

REPLICATED, **MID**-MATURITY

Table 4A. Yields, °Brix, color and defects at harvest.....9
Table 4B. Stand, vine size, canopy and maturity.....10

OBSERVATIONAL, **MID**-MATURITY

Table 5A. Yields, °Brix, color and defects at harvest.....11
Table 5B. Stand, vine size, canopy and maturity.....11

STATEWIDE COMBINED- REPLICATED, **MID**-MATURITY

Table 6A. Yield and Fruit Quality……..……12

Table 6B. Yield by Location……..……13

Statewide compile variety report is located on the Internet at:
http://vric.ucdavis.edu/

or as a pdf file as:

http://vric.ucdavis.edu/pdf/TOMATO/UCCE process tomato var trial10.pdf

This local report is electronically available at UCCE Yolo web site**:**

http://ceyolo.ucdavis.edu/Vegetable_Crops/Processing_Tomato_Variety_Trials/

2010 Processing Tomato Variety Evaluation Trial
Yolo/Solano/Sacramento Counties

by
Gene Miyao, UC Farm Advisor, and Mark Kochi, Field Assistant, Yolo County

California tomato growers averaged over 45 tons per acre for a total of 12.3 million tons in 2010. Last year, 13.3 million tons were produced with an average yield of 43 tons per acre. The 2010 per-acre yield is a new record, while statewide production in 2009 remains the high-water mark.

Spring rains caused planting delays in 2010 as well as created severe incidence of bacterial speck in many local fields. From mid-March to May 28th, at our Woodland office, we measured over 4 inches of rainfall collected from 24 rainy days.

Temperatures were relatively mild over the growing season. The only incidences over 100°F were 2 days at the end of June, 6 days during July, 2 days in August and a day at the end of September, based on Woodland recordings. Heat-units were substantially below the norm from April to June and continued to be cooler in July and August as well. The region experienced almost a 30-day delay in harvest with low activity in July in our area from the combination of delays in planting, cooler springtime weather and setback with bacterial speck.

Heat Units: Historic vs. year 2010
Davis-area weather station (CIMIS #6)
(base 50°F)

	degree days per month		%
Month	Historic	2010	change
March	200	142	-29
April	304	185	-39
May	600	333	-45
June	924	618	-33
July	740	676	-9
Aug	720	604	-16
Sept	619	614	-1
Total	4107	3172	

Were changes observed locally in pest pressure in the 2010 season? Tomato powdery mildew infestations were much less severe than in the past several years. Tomato spotted wilt virus continued to be widespread, but generally at low severity levels. Fusarium wilt continued to spread. Verticillium wilt remained an issue. A latent pathogen, Fusarium foot and crown rot, impacted several fields.

Variety Evaluation Trials

The 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, high yielding and high 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 in the Central Valley from Yolo to Kern. Tests were conducted in a similar fashion to compare local results with tests by UC farm advisors in other locations. All trials except Yolo were conducted in fields with buried drip irrigation systems.

Entries:

Varieties included in the trial were selected in consultation with processors and seed companies.

Sixteen replicated and 13 observational varieties were included in the field trial (table 1A). The comparative standard varieties were AB 2, H 9780 and Sun 6366. All mid entries except AB 2 have nematode resistance; and most varieties have bacterial speck

resistance, while several varieties have resistance to tomato spotted wilt (Table 1A). Campbell's CXD 282 and WoodBridge BQ 187 also have Fusarium wilt race 3 resistance.

Included in the local test was an evaluation of a late application of a foliar nutrient. HyPeel 849 was compared with and without the additional fertilizer.

Locations:

Our local trial was north of Davis with J.H. Meek and Sons.

Farm advisors representing San Joaquin, Merced, Fresno-Tulare/Kings and Kern counties conducted other UC tests.

Methods:

The local trial was established from commercially grown greenhouse transplants. Plants were pulled from trays, counted, bundled and bagged ahead of the field planting for the observational portion of the test. Varieties in the replicated portion of the test were directly planted from the greenhouse trays. The grower's equipment and crew mechanically set the transplants. Skips were filled within a day of the planting. The few transplants that did not survive were replaced over a 2-week period.

The transplants were grown on twin lines, a foot apart from each other, centered on a 5' bed. All plots were 100' long. A short alley separated each replicate block.

All cultural practices in the ~1 acre experimental site were those of the cooperating grower and matched management in the remainder of the larger commercial field.

A field meeting was held at the site as fruit ripened to provide a public viewing opportunity to examine the performance of the varieties in side-by-side comparisons.

To measure yield, fruit from the entire plot were harvested into specialized weigh trailers using the grower's harvesting equipment and crew. A 5-gallon volumetric sample of non-sorted fruit was collected from the mechanical harvester to evaluate fruit defects. Fruit was sampled along the length of the plot. These fruit were graded into categories of marketable red, pink, green, sun-damage, mold and blossom end rot and measured by weight.

From the marketable reds, an ~7 pound sample from each plot was bagged and delivered to a local inspection station of the Processing Tomato Advisory Board. Color, °Brix (soluble solids) and pH were determined by PTAB with a procedure consistent with commercial grading. Additionally, similar samples were hand picked by the Diane Barrett Lab from the UC Davis Food Science and Technology Department to evaluate processing quality.

Statistical analysis of variance methods were used to help interpret the replicated data. Results derived from non-replicated data should be viewed with much less confidence.

MID-MATURITY EVALUATION (TRANSPLANTED ON DOUBLE ROWS)

Our local mid-maturity variety trial evaluation was transplanted with J.H. Meek and Sons north of Davis on a class 2, Rincon silty clay loam soil. Seedling plugs were mechanically transplanted on April 26th in double lines per bed (Table 2). Seedbed soil tilth was very good, although the soil retained high moisture from earlier rainfall. The field was entirely irrigated by furrow. Vine growth was good. Verticillium wilt was prevalent early while powdery mildew occurrence was late. Tomato spotted wilt incidence was low. Harvest on September 2 appeared optimal for fruit maturity and vine condition. The field variety planted by the grower was HyPeel 849, which we added to the experiment.

REPLICATED ENTRIES

Table 4A mid replicated— yield, fruit quality and culls: The top yielding variety was H 5508 with almost 58 tons per acre. HyPeel 849 with 53.7 tons/A along with 7 others were in the next high yielding group, all with more than 50 tons/A.

The highest Brix group was led by Sun 6366 and N 6394, both with an impressive 5.9° Brix and included 9 other varieties in the same group, all with a minimum level of 5.48. The trial averaged 5.6 (although the statistical variation was high, masking potential differences). Sun 6366 had both relatively high yield together with high Brix.

Best color group was led by CXD 282 with 21.5 and included N 6394 and N 6385, both under 22.6.

Fruit pH was lowest with UG 19406 at 4.31 and included H 8504 at 4.32 and H 9780 at 4.36 in the same statistical group. Conversely, fruit pH was elevated with HMX 7885 at 4.59 and both Sun 6366 and N 6394 at 4.56.

The level of pink, green and moldy fruit were low with a maximum of 4% in any one category.

Blossom end rot (BER) damage was unexpected given the mild weather and careful irrigation regime. BER level was 5% with HMX 7885 and 4% with H 5508%. For this category, the damage level raises some concern.

Table 4B mid replicated— vine size, canopy cover and estimated maturity: The larger-vine varieties in this double row test were AB 2, Sun 6366, UG 19406, N 6394 and H 5608. None of the varieties appeared particularly small- vined in this test.

Fruit canopy cover was evaluated shortly before harvest. In this visual assessment, a fruit canopy cover of 80% or more was desirable, while levels below 50% are usually problematic for fruit protection from sun damage. Canopy was poorest with HMX 7885 at 58%, but also in that low group were HMX 6903, HMX 783 and HMX 7885. Canopy cover was best with UG 19406, HyPeel 849, AB 2, AB 3 and CXD 255, all with 88% or better.

Vine necrosis level averaged 30% as a visual assessment. The healthiest vines included CXD 255, AB 2, UG 19406, HyPeel 849, BQ 163, and CXD 282 with 21% or less damage. Maturity influenced the level of necrosis, with a disadvantage with early maturity.

A visual estimate of days to harvest was assessed and compared to the standard AB 2. Sun 6366, BQ 205 and H 4007 appeared to be 9 to 6 days earlier maturing than AB 2. The later maturing varieties in our test appeared to be H 9780 and UG 19406 as well as CXD 255, all about 2 to 3 days later maturing than AB 2. NOTE: later maturity was difficult to assess, especially in this test period.

Tomato powdery mildew incidence was apparent, but occurred relatively late in this trial. Sun 6366 and N 6394 appeared to have high incidence of infection along with BQ 205 and AB 3. The lesser diseased cultivars appeared to be HyPeel 849, CXD 255, H 5608, H 4007 and AB 2.

NON-REPLICATED ENTRIES

Table 5A: mid observational— yield, fruit quality and culls: The highest yielding non-replicated variety was H 7709 with 49.4 tons per acre. Yields on average were lower in the non-replicated portion of the trial.

Brix levels were highest with UG 19006 at 6.0 and BOS 7210246 and BQ 187, both with 5.9. Color ranged from 22 to 25 amongst the varieties. Sunburn levels were high amongst

several varieties including HMX 9903, BQ 198, BQ 187, N 6400 and UG 19306, all with 19% or more.

UG 19006 was one of the standout varieties in the non-replicated trial with higher yield combined with high solids, low pH and low cull rate.

Table 5B mid observational— vine size, canopy, and estimated maturity: Vine size tended to be large. Fruit canopy cover was good overall except for HMX 9903. Maturity ranged from 7 days earlier to 9 days later than AB 2.

UC STATEWIDE VARIETY REPORT: Statewide compiled variety report with other UC advisor tests is posted at UC Vegetable Research and Information Center at:

http://vric.ucdavis.edu/

Table 6A: Replicated Statewide Combined— yield and fruit quality: Yields were highest with N 6385, H 5608 and H 5508 with all above 59 tons/A, averaged across 4 locations (Yolo, San Joaquin, Merced and Fresno). The leader of the high Brix group was BQ 205 with 5.7, but included all varieties with 5.5 Brix levels. Relative performance was affected by location.

Table 6B: Replicated Statewide Combined— yield by location: Average yields from 4 replications are listed by site location from the combined test results. The Merced trial had extraordinarily high yield at 71.5 ton average. And, for instance, H 8504 performed above the average yield for each of the 4 locations except for Fresno site. CXD 282 performed in at the relatively near average in Yolo and Fresno sites, but the lowest in both Merced and San Joaquin sites- and thus was in the lowest yielding group in the statewide average. Note: Thus the location affect on variety performance is an important consideration. The more test location results provide more insight a variety's ability to consistently performance across different environmental conditions.

Table 1A. Mid-Maturity Varieties, 2010 UC Processing Tomato Variety Trial, JH Meek and Sons.

	Company	16 replicated		13 observational	
1	Campbell Soup	CXD 255	VFFNP	CXD 280	VFFNP SW
		CXD 282	VFFF3NP		
2	DeRuiter	**AB 2**	VFFP		
		AB 3	VFFNP		
3	Harris Moran	HMX 7885	VFN	HMX 9903	VFFN
				HMX 9905	VFFN
				HMX 9906	VFFNP
5	Heinz	H 4007	VFFNP	H 6809	VFFN
		H 5508	VFFN SW	H 7709	VFFNP
		H 5608	VFFNP SW		
		H 8504	VFFNP		
		H 9780	VFFNP		
7	Nunhems	**SUN 6366**	VFFNP	N 6398	VFFNP SW
		Nun 6385	VFFNP SW	N 6400	VFFNP
		Nun 6394	VFFNP SW		
8	Orsetti			BOS 7210246	VFFN
10	United Genetics	UG 19406	VFFNP	UG 19006	VFFNP
				UG 19306	VFFNP
11	WoodBridge	BQ 163	VFFNP	BQ 187	VFFF3NP
		BQ 205	VFFNP	BQ 198	VFFNP

Bold = trial standards

Check with seed company to confirm disease resistance.

Table 1B. Disease Code Legend

Code:	Disease Resistance*
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 (race 0)
SW	= Spotted Wilt Virus

*** Check with seed company to confirm disease resistance.**

Table 2. Plot Specifications, Transplant, Mid-Maturity, Davis, 2010

Cooperator:	Steve Meek and John Pon, J.H. Meek and Sons, Woodland
Location:	~0.5 mile south of CR 29, adjacent to east side of CR 98. SW ¼ of NW ¼ of section 31, T 9N, R 2E, MDM SCS map #60.
Field Variety:	HyPeel 849, double lines on 5'-centered beds.
Plot Design:	Randomized complete block with 4 reps. Non-replicated plots adjacent to 1st rep. All individual plots 500 square feet (100' x 5')
Greenhouse:	Westside Transplants, Winters in #338 trays for replicated and #392 trays for observational entries
Planting Date:	26 April as transplants
Population:	~8700 plugs per acre.
Fertilizers:	10-34-0 plus zinc as starter @12 gallons/acre 28-0-0 plus 5 S @ 140 lbs N/acre sidedressed 28-0-0 plus 5 S @ 10 lbs N/acre additional
Field Meeting:	19 August
Fruit Quality Sample:	23 August, Food Science, UCD; 2 September, PTAB
Harvest	2 September (128 days after transplanting)
Soil type:	Rincon silty clay loam, class 2, Storie Index 73
Previous Crop:	wheat
Irrigation method:	furrow, exclusively
General Notes:	Transplants established and grew well. Verticillium wilt was very prevalent. Low incidence of Tomato spotted wilt virus. Late incidence of powdery mildew. Good tonnage with relatively high solids. Timely harvest with grower scheduling harvest specifically for the trial many days ahead of returning to field to pick remainder of the field.

Table 3. Fruit Quality Factor Definitions

SOLUBLE SOLIDS OR °BRIX	A measure of mostly fruit sugars. Soluble solids are directly related to finished processed product yield of pastes and sauces. Soluble solids are estimated with a refractometer, and measured as °Brix.
pH	A measure of acidity. A level below 4.35 is desirable to prevent bacterial spoilage of finished product. pH rises as fruit matures.
COLOR	Measured with a Processing Tomato Advisory Board LED instrument simulating Agtron. Lower numbers correspond to better red fruit color.

FIELD SAMPLING PROCEDURE

Fruit quality determinations were obtained by collecting ~7 pound sample of ripe, non-defect fruit from each plot. A local grade station of the Processing Tomato Advisory Board evaluated our fruit samples for soluble solids (Brix), color and pH.

To determine finished product thickness, additional samples were collected by Sam Matoba and crew and evaluated in the Diane Barrett lab at the UC Davis Food Science and Technology Department as part of a California League of Food Processors-funded project. Two blocks of replicated varieties and all non-replicated plots were evaluated. °Brix, pH, titratable acidity (reported as percent citric acid), and juice Bostwick were the factors measured. The results of the Food Science project are in a separate report.

Fruit defects in the field were estimated by collecting ~5 gallons of unsorted fruit from the mechanical harvester. Fruit were separated into marketable red, pink, green, sun-damaged, mold and blossom end rot categories. Measurements were on a weight basis and reported as percent. PTAB sample was from a collection of the marketable red fruit also used from this sort out.

Table 4A. Davis, Replicated, Mid-Maturity: Yield, fruit quality and defects from processing tomato variety trial (transplant), JH Meek and Sons, 2010

	Replicated Variety	Yield tons/A	LSD 5% yield	Brix	PTAB color	pH	% pink	% green	% sun burn	% mold	% BER	lbs. per 50 fruit
1	H 5508	57.9	a	5.10	22.8	4.39	1	0	5	1	4	8.6
2	HyPeel 849	53.7	b	5.28	23.8	4.38	1	1	5	3	2	8.7
3	CXD 255	53.3	bc	5.50	23.0	4.42	1	1	9	2	3	8.4
4	H 5608	53.0	bc	5.48	23.0	4.49	0	1	6	1	1	9.0
5	SUN 6366	52.1	bc	5.90	23.3	4.56	0	1	18	4	2	8.8
6	HP 849 w/ foliar	51.7	bcd	5.25	25.0	4.38	0	2	5	2	1	8.7
7	H 8504	50.3	bcde	5.38	23.0	4.32	1	1	5	2	3	8.8
8	N 6385	50.3	bcde	5.40	22.5	4.49	0	1	16	3	1	8.4
9	BQ 163	50.2	bcde	5.83	23.8	4.41	0	1	14	2	1	8.5
10	H 9780	49.8	cde	5.48	24.3	4.36	0	0	11	1	2	8.4
11	H 4007	49.7	cde	5.73	22.8	4.45	0	1	13	2	1	8.6
12	UG 19406	49.5	cdef	5.70	22.8	4.31	1	1	4	4	1	8.8
13	CXD 282	48.2	defg	5.33	21.5	4.46	0	1	9	4	2	8.6
14	BQ 205	47.2	efg	5.83	23.5	4.43	1	1	16	2	1	8.8
15	AB 3	46.6	efg	5.78	24.5	4.43	1	1	14	3	0	8.6
16	AB 2	45.6	fg	5.85	23.3	4.39	1	1	13	3	1	8.6
17	HMX 7885	45.5	g	5.25	24.0	4.59	1	1	10	3	5	8.8
18	N 6394	44.6	g	5.90	22.3	4.56	0	1	21	2	0	8.9
	LSD 5%	3.8		0.44	1.1	0.06	1.1	0.8	7.1	2.3	1.9	NS
	% CV	5		6	3	1	125	58	46	67	80	5
	average	50.0		5.6	23.3	4.4	0.6	0.9	10.8	2.4	1.7	8.7

Foliar fertilizer = 3-12-3 plus Fe & Zn @ 1 gpa applied ~ 30 days from harvest.

Major Points:

- ✓ Overall, high yield
- ✓ Brix levels high
- ✓ Low levels of pink/green and mold
- ✓ Blossom end rot moderate and high sunburn with several varieties
- ✓ Foliar fertilizer application did not improve yield or quality of HyPeel 849 (Treatment label #2 vs #6 HyPeel 849 with vs without foliar fertilizer)

Table 4B. Davis, Replicated, Mid-Maturity: stand, vine size, canopy cover and fruit maturity notes (transplant), JH Meek and Sons, 2010.

	Replicated Variety	vine necrosis (%)	vine size (% row width)	fruit canopy cover (%)	mildew infection (%)	estimated maturity (days to AB 2)
1	AB 2	14	100	89	59	0
2	AB 3	26	88	89	83	-2
3	BQ 163	21	95	86	68	0
4	BQ 205	35	88	79	83	-6
5	CXD 255	13	95	89	48	2
6	CXD 282	21	88	83	63	-1
7	H 4007	44	95	65	58	-6
8	H 5508	36	95	73	75	-1
9	H 5608	39	100	64	50	-1
10	H 8504	33	98	76	64	1
11	H 9780	44	100	65	68	3
12	HMX 7885	53	98	58	65	-3
13	N 6385	35	98	70	63	-2
14	N 6394	43	100	71	83	-4
15	SUN 6366	38	100	78	90	-9
16	UG 19406	18	100	90	73	3
17	HyPeel 849	20	90	88	48	0
18	HyPeel 849 w/ foliar	18	90	90	48	0
	LSD 5%	9.1	6.4	6.7	14.0	3.5
	% CV	9	5	6	15	9
	average	30	86	78	61	-1.3

Foliar fertilizer = 3-12-3 plus Fe & Zn @ 1 gpa applied ~30 days before harvest.

Table 5A. Davis, Non-Replicated, Mid-Maturity: Yield, fruit quality and defects, JH Meek and Sons, 2010.

	Observational variety	Yield tons/A	°Brix	PTAB color	pH	% pink	% green	% sun burn	% mold	% BER	lbs./ 50 fruit
1	H 7709	49.4	5.5	24	4.49	0	1	5	1	1	8.5
2	CXD 280	49.1	5.5	22	4.39	0	1	7	3	4	8.7
3	HMX 9905	48.2	5.2	25	4.52	0	0	10	1	1	8.7
4	UG 19006	48.1	6.0	25	4.38	0	1	2	1	0	8.7
5	UG 19306	47.5	5.2	22	4.40	0	2	19	3	2	8.3
6	N 6398	47.2	4.9	23	4.36	0	1	12	3	2	8.5
7	BQ 198	47.0	5.5	23	4.52	0	1	26	3	0	8.9
8	HMX 9906	46.1	5.4	23	4.45	0	1	14	1	0	8.6
9	N 6400	44.8	5.3	22	4.60	0	0	19	1	0	8.1
10	BOS 7210246	44.2	5.9	22	4.47	1	3	8	1	1	9.3
11	H 6809	44.1	5.2	23	4.36	0	0	12	0	2	9.1
12	BQ 187	41.4	5.9	24	4.51	0	0	25	0	1	8.6
13	HMX 9903	40.9	5.5	22	4.48	0	0	34	4	0	8.2
	average	46.0	5.5	23.1	4.46	0.1	0.9	14.9	1.7	1.1	8.6

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

Table 5B Davis, Non-Replicated, Mid-Maturity: Stand, vine size, canopy cover, and fruit maturity notes, transplants, JH Meek and Sons, 2010.

	Observational Variety	vine necrosis (%)	vine size (% row width)	fruit canopy cover (%)	mildew infection (%)	estimated maturity (days to AB 2)
1	BOS 7210246	10	90	90	100	9
2	H 7709	25	100	65	50	6
3	UG 19006	25	100	75	65	1
4	N 6398	30	97	75	60	-7
5	BQ 187	40	83	70	80	-7
6	HMX 9903	70	90	40	50	-7
7	UG 19306	25	100	85	100	1
8	N 6400	30	100	75	80	-4
9	BQ 198	35	90	70	90	-6
10	HMX 9905	30	93	80	40	-2
11	CXD 280	35	90	70-	40	-6
12	HMX 9906	30	83	75	40	-7
13	H 6809	35	93	65	40	1
	average	32	93	72	64	-2.4

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

Table 6A. Statewide, Combined Replicated Trial, Combined Yield and Fruit Quality, 2010

	Variety	Yield tons/A		Brix		Color		pH	
1	N 6385	60.1	a	4.8	(15)	23.3	(04)	4.44	(11)
2	H 5608	59.9	a	4.9	(12)	22.4	(01)	4.43	(10)
3	H 5508	59.2	a	4.7	(16)	23.7	(06)	4.35	(03)
4	SUN 6366	54.7	b	5.5	(05)	23.3	(04)	4.49	(14)
5	UG 19406	54.4	b c	5.6	(03)	24.2	(10)	4.32	(01)
6	N 6394	53.9	b c d	5.5	(04)	23.9	(07)	4.53	(15)
7	CXD 255	53.3	b c d e	5.2	(08)	24.4	(13)	4.42	(09)
8	H 9780	52.9	b c d e	5.0	(11)	25.1	(16)	4.41	(08)
9	BQ 163	52.5	b c d e	5.6	(02)	23.9	(07)	4.40	(06)
10	HM 7885	51.3	c d e f	4.9	(13)	25.0	(15)	4.56	(16)
11	BQ 205	51.1	d e f	5.7	(01)	24.2	(10)	4.39	(05)
12	H 8504	50.5	e f	5.1	(09)	24.3	(12)	4.34	(02)
13	H 4007	48.9	f g	5.0	(10)	23.1	(03)	4.47	(12)
14	AB 2	47.3	g h	5.5	(07)	24.0	(09)	4.37	(04)
15	AB 3	46.1	g h	5.5	(06)	24.7	(14)	4.41	(07)
16	CXD 282	45.5	h	4.9	(14)	23.0	(02)	4.47	(13)
	LSD @ 5%	3.07		0.18		0.83		0.034	
	CV	8.4		5.4		5.6		1.2	
	Ave.	52.6		5.2		23.9		4.42	
	Interaction LSD @ 5%	6.14		0.39		1.85		0.077	
	Location	4		5		5		5	

Yield from 4 locations (Yolo, San Joaquin, Fresno and Merced)

PTAB fruit quality combined from Yolo, San Joaquin, Fresno, Merced and Kern

Number in parentheses is ranking for an attribute in the combined statewide evaluation.

Example: N 7385 is highest for yield, 15th ranked for Brix, 4th for color and 11th for pH.

Table 6B. Statewide, Replicated, Combined Yield by Location, 2010

	Variety	Yield tons/A		Yolo	San Joaquin	Fresno	Merced
1	N 6385	60.1	a	50.3	55.0	57.2	77.9
2	H 5608	59.9	a	53.0	54.0	52.1	80.4
3	H 5508	59.2	a	57.9	43.8	51.6	83.6
4	SUN 6366	54.7	b	52.1	49.8	44.0	72.7
5	UG 19406	54.4	b c	49.5	58.2	36.7	73.1
6	N 6394	53.9	b c d	44.6	52.1	47.2	71.8
7	CXD 255	53.3	b c d e	53.3	46.0	39.6	74.3
8	H 9780	52.9	b c d e	49.8	50.5	36.9	74.5
9	BQ 163	52.5	b c d e	50.2	43.5	43.9	72.4
10	HM 7885	51.3	c d e f	45.5	48.1	37.5	74.3
11	BQ 205	51.1	d e f	47.2	44.6	46.4	66.3
12	H 8504	50.5	e f	50.3	48.3	29.2	74.0
13	H 4007	48.9	f g	49.7	36.0	46.0	63.7
14	AB 2	47.3	g h	45.6	43.6	36.3	63.8
15	AB 3	46.1	g h	46.6	41.1	32.7	63.9
16	CXD 282	45.5	h	48.2	35.9	39.6	58.1
	LSD @ 5%	3.07		3.86	7.15	7.55	5.83
	CV	8.4		5.5	10.7	12.5	5.7
	Ave.	52.6		49.6	46.9	42.3	71.5
	Variety X Location LSD @5%	6.14					