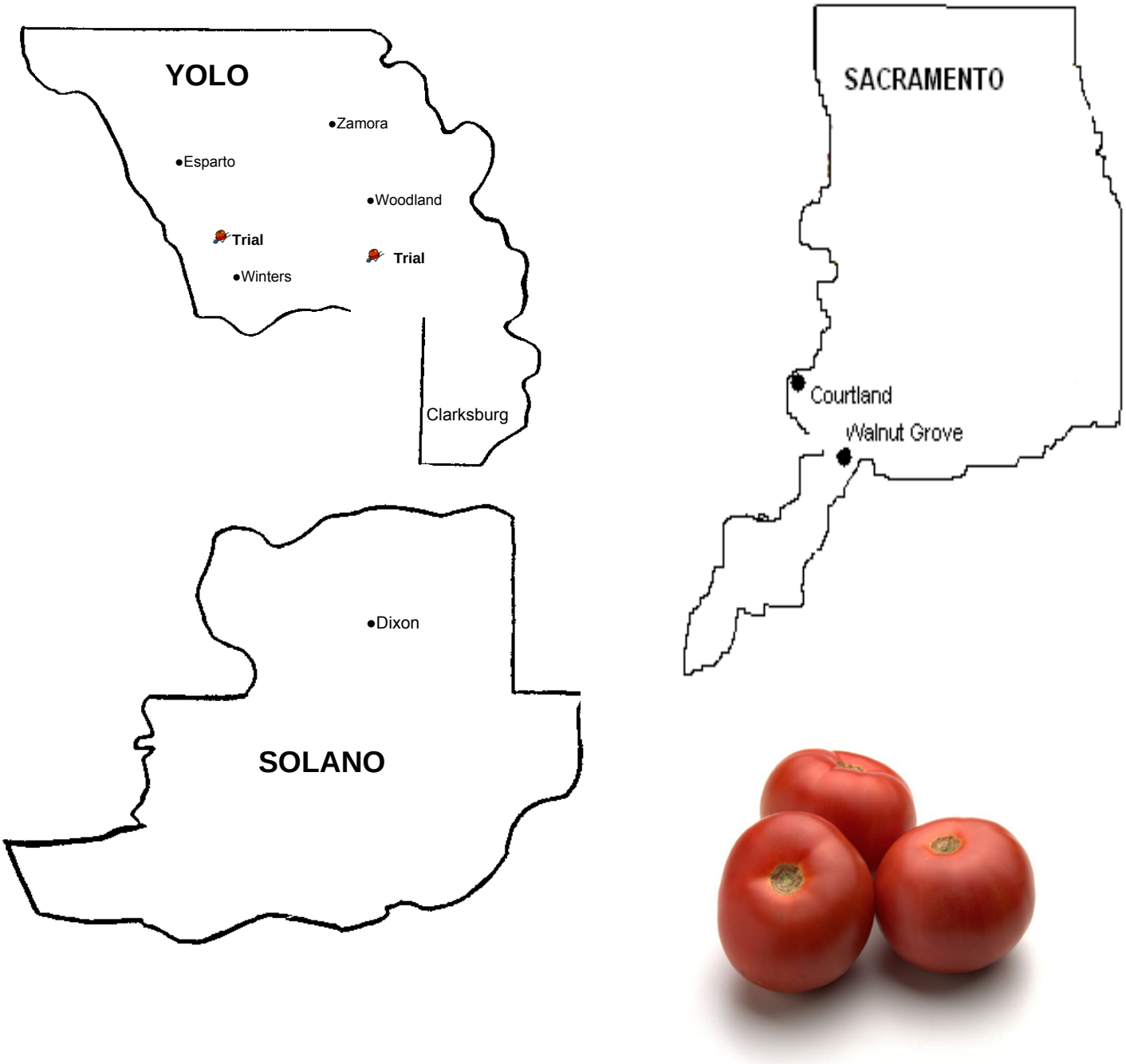
2011 Processing Tomato Variety Trials



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Statewide compile variety report is located on the Internet at:

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

This report as well as historical reports are electronically available at the same web site.

2011 Processing Tomato Variety Evaluation Trials
Yolo/Solano/Sacramento Counties

by

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

Despite challenging weather conditions in the northern part of the state, the California processing tomato industry produced nearly 12 million tons in 2011.

Locally, we saw limited harvest activity in July due to rain-delayed planting. Unusually cool weather in the late spring and early summer further delayed fruit ripening. Spring rains also caused severe bacterial speck damage in numerous fields. The speck stunted plants, which also delayed harvest and reduced yield. While limited in scope, some isolated spring frost killed seedlings and thus thinned stands. Eerie weather in early August, with a few days of reoccurring ground fog, produced outbreaks of late bright. Several early October rainstorms disrupted the late season harvest as well as produced fruit rots. Some fields were abandoned because of the high level of fruit mold that developed while most growers struggled to make grade after the rains.

Some pest activity was minor. Tomato powdery mildew was again low compared to a run several years ago when mildew appeared to be a major, widespread disease. Potato aphid activity was sparse as well.

Tomato spotted wilt virus (TSWV) is now widespread and common in our area. There were some fields where damage was severe. On a regional basis, a wholesale spray program to control thrips, the vectoring insect, does not appear warranted. For some growers, the need to reduce losses to TSWV may include use of resistant varieties or early spray programs once disease is detected. For the vast majority, TSWV may well be present, but without the intensity that requires an aggressive treatment program.

Variety Evaluation Trials

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 combine and 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 15 varieties (table 1A). Variety standards were Heinz 2206 and APT 410. All early varieties were evaluated in a replicated design. UG 15908 was the only entry with spotted wilt resistance.

In the mid-maturity trial, 16 replicated and 13 observational varieties were included (table 1B). Mid-maturity standards were AB 2, H 9780 and Sun 6366. All mid entries except AB 2 are nematode resistance. Several varieties are

listed as resistant to spotted wilt. Woodbridge BQ 186 was the only entry with Fusarium wilt race 3 resistance.

Locations:

The local early trial was north of Winters with Don Rominger and Sons. The mid maturity trial was between Woodland and Davis with J.H. Meek and Sons.

Other UC tests were conducted by farm advisors representing San Joaquin, Stanislaus, Merced, Fresno and Kern counties.

Methods:

Both the early and mid-maturity trials were established from commercially grown greenhouse transplants. All plants in the replicated portion of the trial were directly planted from trays. Non-replicated entries were pulled from trays, counted, bundled and bagged ahead of the field planting to conserve space on the transplant sled storage racks. 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.

Both our trials were transplanted on twin lines, with each line 12" apart from each other, on a bed centered on 5'. All plots were 100' long. A short alley separated each replicate block.

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 site as fruit ripened to provide an opportunity to examine the performance of the varieties in side-by-side comparisons.

To measure yield, fruit from the entire plot were harvested into special 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 data. Conclusions derived from non-replicated data should be viewed with much less confidence.

EARLY-MATURITY EVALUATION: WINTERS

Early-maturity varieties were evaluated with Joe Rominger in a Don Rominger and Sons field north of Winters. We transplanted on April 6 into twin lines per bed in a class 2, Tehama loam soil (Table 2A). Seedlings established well but were severely stunted from bacterial speck as a result of late spring rains. Vine vigor was slow to recover and fruit set suffered from the disease. Irrigation was frequent in alternating, every-other furrow sequence. Harvest was timely on August 6.

Table 4A early replicated—yield, fruit quality and culls: The highest yielding group was led by N 6397 with 36.5 tons per acre, although statistically grouped with 5 other varieties including APT 410, H 1015, BQ 204, UG 15308 and HMX 1889.

Brix levels were very high with a trial average of 5.8. BQ 140 had the highest Brix level with 6.3, but included SVR 1245, N 6397 and H 1015 in the high solids group. SVR 1245 had low pH at 4.21 although it was not in the earliest maturity group.

Sunburn level was highest at 18% with H 3044. Mold was not a problem. Blossom end rot was prevalent with an average of 5% for SVR 1245 and H 1015.

A visual assessment of speck damage in the late spring when speck was active indicated that H 3044 was highly susceptible with 54% infection level. UG 15908, APT 410, BOS 602, and UG 15308 also had levels exceeding 28%. The lowest infection level in our test was noted with H 2206, N 6397, H 1015, K 2770 and BOS 686, all with 16% or less.

Table 4B early replicated— stand, vine size, canopy cover and estimated maturity: Plant population on the double row planting averaged 9,365 plugs per acre. Transplant stands were comparable amongst the varieties.

Vine size was difficult to judge with the twin row planting. Overall vine size was moderate. The smaller-vined varieties in this test were H 2206, H 3044, and K 2769 at 73% of the row width. BQ 204 and H 1015 were small vined as well at 85% or less of the row width.

Canopy cover for fruit protection from sun damage ranged from 45 to 88%. Fruit canopy cover was fair overall, but weak with H 3044, K 2769 and H 2206, all below 65% at harvest. Levels above 80% are good targets.

Visual rating of 'days-to-estimated-harvest' date was made relative to APT 410. The differences ranged from -7 to 6 days later on average. The earliest varieties in the test were H 2206 and K 2769, both appearing to be 7 days earlier than APT 410. The latest maturing varieties, 6 days behind APT 410, were SVR 1245 and HMX 1889.

MID-MATURITY EVALUATION: WOODLAND

Our local mid-maturity variety trial evaluation was transplanted with J.H. Meek and Sons in a field between Woodland and Davis on a class 2, Rincon silty clay loam soil. Seedling plugs were mechanically transplanted on April 26th in double lines per bed (Table 2B). Seedbed condition was very good. The field was irrigated with a buried drip system. Plants established well and early vine growth was good. Late spring rains caused severe bacterial speck infection. Vine growth was retarded, but eventually recovered after a long delay. Canopy cover was weak in general, although regrowth was also an issue for many varieties as fruit started into the ripening phase. Ripening was slow and uneven. Harvest on September 12 was very well timed for the trial.

REPLICATED ENTRIES (WOODLAND)

Table 5A mid replicated— yield, fruit quality and culls: Overall yield averaged 53.4 tons in spite of the set backs from bacterial speck. Three of the varieties were in the top yield category led by H 7709 with 60.7 tons per acre and included HM 9905 and H 5508. The lowest yielding varieties were Sun 6366 and UG 19406, with less than 46 tons per acre. Both were especially set back by bacterial speck with loss of vigor with delayed fruit set as reflected in a high percent of immature fruit (25% or more).

Brix level was moderate with an average of 5.1%. The high Brix group was led by AB 314 with 5.7 and included Sun 6366 with 5.6 and AB 0311 with 5.5.

Fruit pH averaged 4.38. This level is interesting given the harvest was 139 days after planting. While the weather and the speck delayed harvest, fruit ripening was well spread out with the crown set field storing for an extended period.

Mold levels were low. Sunburn was especially high given the moderate temperatures during the ripening period. Sunburn levels were 27% with both N 6385 and N 6394. Both varieties were some of the earliest varieties in the test.

Speck infection levels as measured when speck was active in the late spring averaged 28%. The varieties with highest speck infection were Sun 6366 (54%), AB 314 (50%), AB 3 (43%) and AB 0311(43%). Speck infection levels at or below 10% were rated on HM 9905, H 7709, N 6385, H 3402, H 9780 and UG 19006.

Table 5B mid replicated— vine size, canopy cover and estimated maturity: All of the varieties covered the width of the beds completely or nearly so. There was no statistically significant difference amongst the varieties in the replicated portion of the test when planted as double lines on a 5-foot centered bed.

Fruit protection as canopy cover was evaluated shortly before harvest. Canopy cover at time of harvest of 80% or more is desirable, while levels below 50% are usually problematic for fruit protection from sun damage. Canopy was poorest with Sun 6385 at 38%, and weak with H 7709 at 48% and with N 6394 at 55%. Cover was best with UG 19406, AB 314, BQ 163, AB 2, AB 3 and AB 311, all with a cover of 79% or higher.

A visual estimate of days to harvest was assessed and compared to the standard AB 2. The earliest varieties were N 6385, HM 9905, N 6394 and BQ 205, which were 13 to 8 days earlier. The latest varieties in our test appeared to be Sun 6366 and UG 19406, both 6 days later maturing than AB 2.

NOTE: *maturity would likely have ranked differently without the bacterial speck problem, especially with Sun 6366.*

NON-REPLICATED ENTRIES (WOODLAND)

Table 5C: mid observational— yield, fruit quality and culls: The highest yielding non-replicated variety was N 6404 with 62.8 tons per acre with large fruit.

BQ 186 had the highest Brix at 5.8.

Culls from sun damage ranged from 60% to 5%. N 6402 had the lowest sun damage level with 5%.

The highest and the lowest yielding varieties (N 6404 and C 298) in the test both had only 3% speck infection levels. Additionally, there were 5 other varieties with only 3% infection.

Table 5D mid observational— vine size, canopy, and estimated maturity: All vines covered 100% of the row width, except for BQ 265 at 70% and C 299 at 80%.

Canopy cover was fair overall except for HMX 9903 which withered to 10% and for HMX 1890 at 40%. Vine necrosis at harvest was very poor with C 298, HMX 9903, HMX 1884, and HMX 1890, all with 90% or more necrotic leaves. The 'healthiest' vines with the least necrosis were BQ 265, N 6402, N 6404, HMX 1885, and DRI 0319 with 35% or less.

Maturities ranged from -19 days to +2 days compared to AB 2. The gauge of maturity is unclear because of the influence of bacterial speck in this test.

UC STATEWIDE VARIETY REPORT: Statewide compiled variety report with other UC advisor tests is posted at:

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

Table 1A. Early Maturity Entries, 2011 Statewide UC Processing Tomato Variety Trial, D.A. Rominger and Sons, Winters.

	Company	Replicated (15)	
1	Harris Moran	HMX 1889	VFFN
2	Heinz	H 1015	VFFNP
		H 2206	VF
		H 3044	VFFN
3	Keithly Williams	K 2769	VFFNP A
		K 2770	VFFN, A, TYLCV
4	Orsetti	BOS 602	VFFN
		BOS 686	VFFN
5	Nunhems	N 6397	VFFN
6	Seminis	**APT 410**	VFFNP
		SVR 1245	VFFNP
7	United Genetics	UG 15308	VFFNP
		UG 15908	VFFN SW
8	WoodBridge	BQ 140	VFFNP
		BQ 204	VFFNP

BOLD LETTERS = trial standards

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)
D = DODDER TOLERANCE
TYLCV=TOMATO YELLOW LEAF CURL VIRUS SW
= TOMATO SPOTTED WILT VIRUS

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

Bacterial speck resistance to race 0 appears to have little value with our current pathogen population.

Table 1B. Mid-Maturity Varieties, 2011 Statewide, UC Processing Tomato Variety Trial, JH Meek and Sons.

	Company	16 replicated		13 observational	
1	Campbell Soup			C 298	VFFNP
				C 299	VFFNP
2	Monsanto	**AB 2**	VFFP	DRI 0319	VFFNP SW
		AB 3	VFFNP		
		AB 0311	VFFNP SW		
		AB 314	VFFNP	<< in grower field- Yolo only	
3	Harris Moran	HM 9905	VFFN	HMX 9903	VFFN
				HMX 1884	VFFNP
				HMX 1885	VFFNP SW
				HMX 1890	VFFNP SW
4	Heinz	H 3402	VFFNP		
		H 5508	VFFN SW		
		H 5608	VFFNP SW		
		H 7709	VFFNP		
		H 9780	VFFNP		
5	Nunhems	**Sun 6366**	VFFNP	N 6398	VFFNP SW
		N 6385	VFFNP SW	N 6402	VFFNP SW
		N 6394	VFFNP SW	N 6404	VFFNP SW
6	United Genetics	UG 19006	VFFNP	UG 19306	VFFNP
		UG 19406	VFFNP		
7	WoodBridge	BQ 163	VFFNP	BQ 186	VFFF3NP
		BQ 205	VFFNP	BQ 265	VFFNP

BOLD LETTERS = trial standards

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

Table 2A. Plot Specifications, Early-Maturity, Winters, 2011

Cooperator:	Joe Rominger, D.A. Rominger and Sons, Winters
Location:	NW of Winters. SE corner of County Road 89 x CR 29. NW 1/4 of NW 1/4, Section 34, T9N, R1W, MDM. SCS sheet #58.
Field Variety:	APT 410, double lines on 5'-centered beds.
Plot Design:	Randomized complete block, 4 reps. Individual plots were 500 square feet, 100' x 5'.
Greenhouse:	Westside Transplants, all in #338 trays
Planting Date:	6 April as transplants
Population:	~9365 plugs per acre
Fertilizers:	100 lbs. 11-52-0 sidedressed in fall 10 gallons 8-24-5 plus zinc chelate pre-plant 55 gallons 28-0-0 (5% S) sidedress at layby 30 lbs N/acre as UN 32 as water run
Field Meeting:	2 August
Fruit Quality Sample:	2 August for Food Science, UCD 12 August for PTAB
Harvest:	6 August (122 days after planting)
Soil type:	Tehama loam, Class 2, Storie Index 72.
Previous Crop:	2010 tomatoes
Irrigation method:	furrow
General:	Established well, but grew slowly. Difficult to recover from severe setback with bacterial speck developing from late spring rains. Vine growth and fruit set greatly reduced. Frequent, every-other-row irrigation.

Table 2B. Plot Specifications, Transplant, Mid-Maturity, Woodland, 2011

Cooperator:	Steve Meek and John Pon, J.H. Meek and Sons, Woodland
Location:	1/2 mile south of CR 29, adjacent to east side of CR 99. NW ¼ of SW ¼, section 32, T 9N, R 2E, MDM SCS map #60. Meek field #24
Field Variety:	AB 314, 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 in #338 trays for replicated and #392 trays for observational entries
Planting Date:	26 April as transplants
Population:	~8700 plugs per acre.
Fertilizers:	8-24-6 plus zinc 3-13-18 at transplanting 28-0-0 plus 5 S @ 140 lbs N/acre calcium thiosulfate CAN 17 at 10 gpa
Field Meeting:	30 August
Fruit Quality Sample:	6 Sept for Food Science, UCD 12 Sept for PTAB
Harvest	12 September (139 days after transplanting) timely harvest fruit maturity delayed with cool weather and bacterial speck setback.
Soil type:	Rincon silty clay loam, class 2, Storie Index 73
Previous Crop:	tomato
Irrigation method:	buried, drip irrigation
General Notes:	Transplants established and grew well. Multiple late spring rains created conditions for severe bacterial speck. Plant growth revived, but many varieties suffered from delayed maturity and reduced fruit set. Average yield was over 50 tons/acre. High sunburn damage for generally moderate weather conditions because of vine canopy cover.

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.

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.

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 (T-4). 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.

Table 4A. Winters, Replicated, Early-Maturity: Yield, quality and cull-out from tomato variety evaluation, D.A. Rominger & Sons, 2011.

	Variety	Yield tons/A		°Brix	PTAB color	pH	% pink	% green	% sun burn	% mold	% BER	lbs./ 50 fruit	% bacterial speck infection
1	N 6397	36.5	a	6.1	23	4.45	3	6	5	0	3	5.34	16
2	**APT 410**	35.5	ab	5.7	24	4.38	3	5	8	0	1	6.31	35
3	H 1015	35.4	ab	6.0	21	4.49	3	6	10	0	5	6.00	16
4	BQ 204	35.2	abc	5.8	23	4.42	3	5	4	0	1	4.70	21
5	UG 15308	35.0	abcd	5.8	24	4.31	7	7	3	0	1	5.09	29
6	HMX 1889	34.6	abcd	5.5	23	4.49	4	11	7	0	1	6.98	25
7	K 2770	33.8	bcde	5.7	24	4.36	3	6	3	0	0	5.08	16
8	BOS 602	33.7	bcde	5.7	26	4.34	5	9	7	0	2	6.95	32
9	BQ 140	33.5	bcde	6.3	23	4.31	6	11	2	0	2	5.65	21
10	UG 15908	32.8	cde	5.9	25	4.38	7	8	4	0	1	5.28	39
11	**H 2206**	32.6	de	5.9	23	4.39	1	2	6	0	0	4.50	13
12	K 2769	32.0	ef	5.9	24	4.44	3	3	3	0	0	4.34	21
13	SVR 1245	30.1	f	6.2	26	4.21	8	12	9	0	5	6.25	22
14	H 3044	27.0	g	5.4	22	4.48	8	4	18	0	2	5.76	54
15	BOS 686	26.8	g	5.9	21	4.39	7	13	4	0	1	5.61	16
	LSD 0.05	2.4		0.32	2.0	0.10	3.4	2.7	4.7	NS	1.6	5.28	10.4
	CV	5		4	6	2	49	26	52	469	65	7	29
	Average	33.0		5.8	23.4	4.39	4.9	7.2 ^	6.2 ^	0.0	1.7	5.6	24.9

^ significant statistical non-additivity = weak confidence in analysis for 5 green and sunburn

Major Points:

√ The highest speck susceptible group was H 3044; and was followed by UG 15908, APT 410, BOS 602 and UG 15308.

√ Modest yield largely due to severe bacterial speck infection.

√ Very high Brix level with average of 5.8 and led by BQ 140, SVR 1245, N 6397 & H 1015

Table 4B. Winters, Replicated, Early-Maturity: Stand, vine size, canopy and maturity (twin-row per bed), D.A. Rominger and Sons, 2011.

	Replicated Variety	plants per 100 feet	% bed cover	% fruit canopy cover	estimated maturity relative to APT 410 (days)
1	**APT 410**	108	93	76	0
2	BOS 602	108	93	71	1
3	BOS 686	108	95	80	5
4	BQ 140	107	90	88	4
5	BQ 204	108	83	69	-1
6	H 1015	107	85	68	-1
7	**H 2206**	107	73	64	-7
8	H 3044	107	73	45	2
9	N 6397	108	95	78	0
10	SVR 1245	108	98	76	6
11	HMX 1889	108	93	73	6
12	UG 15308	107	100	84	1
13	UG 15908	108	100	81	3
14	K 2769	106	73	56	-7
15	K 2770	108	88	74	1
	LSD .05	NS	6.3	7.9	2.7
	% CV	1	5	8	17
	Average	108	89	72	1

Table 5A. Woodland, Replicated, Mid-Maturity: Yield, fruit quality and defects from processing tomato variety trial, JH Meek and Sons, 2011.

	Replicated Variety	Yield tons/A	LSD 5% yield	°Brix	PTAB color	pH	% pink	% green	% sun burn	% mold	% BER	lbs. per 50 fruit	% speck infection
1	H 7709	60.7	a	4.8	24	4.40	1	1	14	2	0.0	6.75	8
2	HM 9905	59.7	ab	5.1	25	4.49	3	2	12	0	0.0	6.69	6
3	H 5508	58.6	abc	4.6	23	4.35	1	2	7	1	0.2	7.23	20
4	BQ 205	56.4	bcd	5.3	23	4.39	2	2	12	2	0.0	8.15	25
5	H 5608	56.0	bcd	4.5	22	4.38	4	4	9	1	0.0	6.81	39
6	AB 0311	54.8	cde	5.5	23	4.29	6	4	11	2	0.0	8.39	43
7	**AB 2**	54.5	cde	5.2	24	4.33	9	5	12	1	0.0	8.33	32
8	**H 9780**	54.2	de	5.0	23	4.36	2	3	12	1	0.0	7.68	9
9	BQ 163	54.1	de	5.2	23	4.40	3	4	18	1	0.1	8.11	28
10	UG 19006	54.0	def	5.1	22	4.32	1	1	6	2	0.0	6.55	10
11	N 6394	53.3	def	5.1	23	4.52	4	2	27	3	0.0	7.90	32
12	H 3402	52.6	def	4.8	23	4.50	2	2	12	1	0.2	5.68	8
13	AB 314	52.4	def	5.4	25	4.26	7	8	10	3	0.0	7.96	50
14	AB 3	51.6	ef	5.2	23	4.40	8	7	6	1	0.0	9.28	43
15	AB 314	49.9	f	5.7	24	4.27	7	8	10	3	0.3	8.23	50
16	N 6385	49.9	f	4.5	23	4.47	1	0	27	1	0.0	6.94	8
17	SUN 6366	45.2	g	5.6	25	4.38	14	11	8	1	0.0	8.56	54
18	UG 19406	42.5	g	5.0	22	4.29	11	17	5	2	0.0	7.05	35
	LSD 5%	4.2		0.3	1.7	0.07	3.8	4.0	6.8	NS	NS	0.67	12.8
	% CV	6		4	5	1	55	61	40	122	447	6	32
	average	53.4		5.1	23	4.38	5	5	12	1	0.05	7.57	28
							^				^		

^ statistically significant non-additivity= weak analysis for pink and blossom end rot categories

AB 314 was grower selection within commercial field. AB 314 was planted as 2 separate entries within the test. Results are displayed to demonstrate variation within the test.

Table 5B. Woodland, Replicated, Mid-Maturity: stand, vine size, canopy cover and fruit maturity notes (transplant), JH Meek and Sons, 2011.

	Replicated Variety	11-Sep vine necrosis (%)	vine size (% row width)	fruit canopy cover (%)	% speck infection	estimated maturity (days to AB 2)^
1	**AB 2**	25	100	80	32	0
2	AB 0311	21	98	79	43	-3
3	AB 3	21	98	81	43	3
4	BQ 163	21	100	81	28	-3
5	BQ 205	28	95	76	25	-8
6	H 3402	54	100	64	8	-6
7	H 5508	57	100	69	20	-3
8	H 5608	39	100	71	39	3
9	H 7709	79	100	48	8	-6
10	**H 9780**	50	100	69	9	-1
11	HM 9905	39	98	69	6	-10
12	N 6385	92	100	38	8	-13
13	N 6394	82	100	55	32	-8
14	SUN 6366	32	100	78	54	6
15	UG 19006	68	100	65	10	-4
16	UG 19406	13	100	86	35	6
17a	AB 314	10	100	83	50	4
17b	AB 314	18	100	83	50	3
	LSD 5%	12.9	NS	7.4	12.8	3.9
	% CV	22	3	7	32	7
	average	25	99	71	28	-2.3

^ Standards from test (AB 2 and Sun 6366) were **extremely delayed** in ripening due to bacterial speck.

Table 5C. Woodland, Non-Replicated, Mid-Maturity: Yield, fruit quality and defects, JH Meek and Sons, 2011.

	Observational variety	Yield tons/A	°Brix	PTAB color	pH	% pink	% green	% sun burn	% mold	% BER	lbs./ 50 fruit	6-Jun speck (%)
1	N 6404	62.8	5.0	22	4.51	1	2	18	0	0	7.70	3
2	DRI 0319	57.4	5.3	22	4.40	6	7	15	0	0	7.70	21
3	UG 19306	56.4	5.1	23	4.30	4	3	16	2	0	7.45	21
4	HMX 1885	52.4	5.2	21	4.45	1	2	19	3	0	7.10	3
5	HMX 1884	52.1	5.0	22	4.49	2	1	31	0	0	6.95	21
6	N 6402	50.7	5.4	22	4.43	1	2	5	1	0	5.90	10
7	N 6398	50.3	4.3	22	4.47	1	0	26	1	0	6.70	3
8	BQ 186	45.6	5.8	22	4.51	2	1	12	3	1	6.50	3
9	C 299	44.8	4.9	23	4.40	0	1	32	4	0	7.80	10
10	HMX 1890	42.2	4.9	24	4.59	0	1	37	1	0	5.65	3
11	BQ 265	41.6	4.8	27	4.37	6	3	12	1	0	8.40	35
12	HMX 9903	40.6	4.8	20	4.58	2	1	60	1	0	6.15	3
13	C 298	29.6	5.1	24	4.38	3	0	53	1	0	7.40	3
	average	48.2	5.0	22.6	4.45	2.3	1.7	25.8	1.4	0.1	7.0	10

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

Table 5D Woodland, Non-Replicated, Mid-Maturity: Stand, vine size, canopy cover, and fruit maturity notes, transplants, JH Meek and Sons, 2011.

	Observational Variety	11-Sep vine necrosis (%)	vine size (% row width)	fruit canopy cover (%)	6-Jun speck (%)	estimated maturity (days to AB 2)^
1	N 6402	35	100	70	10	-13
2	BQ 265	21	70	80	35	-7
3	HMX 1884	90	100	60	21	-7
4	C 299	65	80	60	10	-18
5	HMX 1890	90	100	40	2.5	-14
6	N 6404	35	100	80	2.5	-12
7	HMX 1885	35	100	85	2.5	-7
8	BQ 186	65	100	70	2.5	-13
9	N 6398	79	100	70	2.5	-15
10	HMX 9903	100	100	10	2.5	-19
11	DRI 0319	35	100	85	21	2
12	UG 19306	50	100	80	21	-10
13	C 298	100	100	90	2.5	0
	average	62	96	68	10	-10.2

^ AB 2 in test was **extremely delayed** in ripening due to bacterial speck.

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