

## **Title:** Plum / Roma Tomato Variety Trial 2014 (year 2 of 2)

### Report to Pennsylvania Vegetable Marketing Research Program

#### **Personnel:**

Steve Bogash, Horticulture Educator  
Cumberland County Extension  
301 Allen Rd. Suite 601  
Carlisle, PA 17013  
717-240-6500 ext. 6507  
Email: smb13@psu.edu

#### **Introduction:**

Plum or Roma-type tomatoes continue to have a strong market presence due to both consumer and restaurant demand. While the vast majority of plum-types' go into processing and are machine harvested, there is substantial and growing demand for trellised, hand-picked fruit. Much of this demand is ethnic as many Mediterranean cuisines specify plum-type tomatoes due to the increased fruit solids. In addition, home canners prefer these fruit for the same reason and so the fruit are a common product at PA auctions, farm markets, wholesale markets, and farmers markets. As with slicing tomatoes, today flavor is paramount for consumers while production characteristics are growers' primary concern. This report is a summary of the results from the 2014 and 2013 growing seasons.

For 2013, the replicated portion of the trial was organized to target fresh market Plum / Roma types grown under field conditions. We also did a single block planting for observational purposes in the Haygrove Super Solo high tunnel at the PSU Southeast Agricultural Research and Extension Center (SEAREC) as a showcase for the Summer PVGA field day. Harvested fruit from this program were showcased and available for sampling at the PVGA Summer Field Day. Tomatoes were evaluated for yield, flavor, production characteristics, and susceptibility to yellow shoulder. A public tasting was held at the PSU Summer Garden Experience program on July 27, 2013.

For 2014, the trial was planted in both a Haygrove Super Solo high tunnel and outdoors. Only the high tunnel yielded any data as the field planting succumbed to Bacterial canker just as the plants were setting fruit. Some of the varieties were tasted by the gardening public at the 2014 Summer Garden Experience program at SEAREC on Saturday, July 26, 2014. Their comments and the tasting scores are factored into the variety comments for 2014.

#### **Objectives:**

- Identify paste / roma tomato cultivars that have promise as successful market varieties.
  - o Identify those cultivars that are both resistant and susceptible to yellow shoulders based on an intensive tissue testing program.
  - o Identify cultivars that are considered superior in flavor and appearance.
  - o Produce saleable yield data (size, avg. weight, etc.) for the cultivars in this program in order to allow growers to select varieties that meet their marketing criteria.

- Increase local market share for fresh market tomatoes by local growers by assisting them in the selection of tomato cultivars that are considered superior by tasting panels.
- Determine the maximum potential yield and packout for selected varieties through intensive tissue analysis and subsequent nutrient application.

**Work Statement:**

24 fresh market plum / Roma tomato cultivars were planted in two plant plots, replicated 4X in a randomized block planting plan. Row ends were buffered with 2 plant, non-trial tomato plants. All varieties were trained to a modified Florida Weave trellis using fresh-cut, oak, 8' stakes as needed for the indeterminate types. A protectant disease program based on chlorothalonil (Bravo, Equus...) with Late blight materials included during high disease pressure parts of the season was applied on a 7 day schedule to field plants. The high tunnel disease program consisted of a 5 day spray schedule using Regalia, Actinovate AG and Stimplex with Badge SC included periodically as a tank mix with the Regalia. No insecticides or miticides were needed in the field planting. Fruit was harvested twice per week beginning in early July.

**Variety Comments:**

Amish Paste (I): The taste of this variety was amazing and better than many good slicers. Very nice and meaty fruit that are a bit larger than average. The plants were huge and topped 8' stakes. Some Yellow Shoulders, but only in the high tunnel plants. Higher tissue K levels in 2014 prevented this disorder.

Bellstar (D): This very compact determinate variety set nearly all of its' fruit very early, then shut down. Good for very early production, but lacking in flavor.

BHN 685 (D): Like most BHN varieties, BHN 685 has very high production on sturdy determinate plants. Falling right in the middle of the pack for flavor, the commercial variety was among the highest producers in both the field and high tunnel.

BHN 901 (D): This yellow fleshed variety produces high quality fruit with good eating quality. Mild flavored.

Big Mama (I): Very large fruit on moderate sized indeterminate vines. Excellent flavor and good processing characteristics for home canners.

Cassidys' Folly (I): Like Amish Paste, the flavor was excellent. The fruit is beautifully striped with a deep red interior and somewhat smaller than Amish Paste. There was little to no Yellow Shoulders. While the plants are indeterminate, they are manageable on 8' stakes.

Fresh Salsa (D): Extremely high yields of great tasting fruit on compact vines.

Halley 3155 VF (D): While coming in 6<sup>th</sup> for taste, this variety had poor production and relatively weak vines. Another East Coast trial relegated this variety to West Coast production.

La Roma III (D): Very poor production and flavor.

Margherita (D): Moderate flavor and production over an extended period.

Mariana (D): Very good production, but lacking in flavor.

Monica (D): Very good production, large fruit and good flavor. An excellent determinate variety.

Monticello (D): Average production and flavor on sturdy vines that produced over a long season.

Paisano (D): Low production and poor flavor.

Picus (D): Very good production on compact plants with larger than average fruit that had good flavor.

Plum Regal (D): Excellent production, moderate sized fruit and very good flavor.

Plum Tigris (D): This is the only striped paste-type fruit on a determinate plant in our trial. While the fruit were nice to look at, the flavor was lacking as was the yield. No Yellow Shoulders.

Pony Express (D): Moderate production on compact vines, but just OK flavor.

Roma Grande (I): These seeds were found on a Burpee Seed rack at Lowes and are unavailable through catalog from Burpee. Excellent flavor and the highest yields of the entire trial.

San Marzano Lungo II (I): Very unusual fruit in that they were extremely meaty with an unusual blocky appearance. The flavor was just below the middle of the pack.

Sausage Cream (I): This was the sole white variety in this trial. The flavor was mild and sweet and borne on very large vines.

Striped Roma (I): Our #2 fruit for flavor. The fruit are squatter than Cassidy's Folly, but lower yielding. A truly beautiful striped paste tomato that should do well in urban farmers markets. There was little to no Yellow Shoulder.

Tachi (D): Poor performance and flavor.

Yaqui (D): Good yields, but lacking in flavor.

*Special thanks to William Brandenburg, Ian Gallo, Taryn Hogeland, Elizabeth Lesko, Brodie Pomper and Sadie Smith, Summer Interns and Horticulture Research Assistants who did much of the sweat work and data collection for this project.*

# Paste Tomato Trial 2014

## High Tunnel

Variety Name	Plot count #1's. 8 plants	Plot weight #1's. 8 plants	Yield per 100 plants count	Yield per 100 plants weight	Tasting Rank
Pony Express	599	#142.2	7,487	#1,777.5	15
Tachi	579	#121.6	7,238	#1,529.9	24
BHN 901	770	#138.6	9,625	#1,733	10
BHN 685	781	#187.4	9,763	#2,342.5	16
Monticello	598	#119.6	7,475	#1,495	13
Plum Regal	888	#195.36	11,100	#2,442	8
Picus	758	#159.2	9,475	#1,989.75	12
Fresh Salsa	1192	#250.32	14,900	#3,129	3
Big Mama	502	#190.76	6,275	#2,385	4
Sausage Cream	734	#102.76	9,175	#1,284.5	9
Paisano	702	#126.36	8,775	#1,579.5	19
Monica	601	#159.23	7,513	#2,015	17
Bellstar	474	#95.9	5,925	#1,198.6	22
Roma Grande	1444	#245.5	18,050	#3,068.5	5
La Roma III	599	#107.82	7,488	#1,348	21
Yaqui	649	#168.74	8,113	#2,109.3	20
Margherita	704	#119.68	8,800	#1,496	11
Plum Tigris	722	#122.74	9,025	#1,534.3	18
Halley 3155 VF	725	#116	9,063	#1,450	6
Striped Roma	531	#116.82	6,638	#1,460.3	2
Amish Paste	459	#114.75	5,738	#1,434.4	1
San Marzano	1102	#132.8	13,775	#1,660	14
Cassidy's Folly	1101	#135.4	13,763	#1,693	7
Mariana	803	#136.51	10,038	#1,706	23

Tasting rank: One got the highest marks from our tasting panel and the 24 the lowest.

# Paste Tomato Trial 2013

## Outdoors

Variety Name	Plot count #1's. 8 plants	Plot weight #1's. 8 plants	Yield per 100 plants count	Yield per 100 plants weight	Tasting Rank
Pony Express	521	#123.66	6,513	#1,546	17
Tachi	563	#116.05	7,038	#1,451	24
BHN 901	758	#135.27	9,475	#1,691	11
BHN 685	744	#177.17	9,300	#2,215	15
Monticello	606	#123.75	7,575	#1,545	13
Plum Regal	851	#191.14	10,638	#2,389	8
Picus	740	#152.95	9,250	#1,912	12
Fresh Salsa	1128	#207.71	14,100	#2,596	3
Big Mama	408	#145.49	5,100	#1,819	4
Sausage Cream	740	#87.8	9,250	#1,098	9
Paisano	641	#117.91	8,013	#1,474	19
Monica	552	#148.08	6,900	#1,851	10
Bellstar	468	#92.65	5,850	#1,158	22
Roma Grande	1485	#248.43	18,563	#3,105	5
La Roma III	575	#101.27	7,188	#1,266	21
Yaqui	611	#158.51	7,638	#1,981	20
Margherita	670	#113.36	8,375	#1,417	16
Plum Tigris	653	#111.35	8,163	#1,392	18
Halley 3155 VF	716	#111.71	8,950	#1,396	6
Striped Roma	495	#107.29	6,188	#1,341	2
Amish Paste	415	#105.41	5,188	#1,318	1
San Marzano	1063	#128.13	13,288	#1,602	14
Cassidy's Folly	1019	#124.85	12,738	#1,561	7
Mariana	782	#133.06	9,775	#1,663	23

Tasting rank: One got the highest marks from our tasting panel and the 24 the lowest.