



Title: Report, High Tunnel Fresh Market Slicer Tomato Variety Trial 2010

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Introduction:

High Tunnel acreage in PA and the Mid-Atlantic continues to grow due to improvements in tomato quality and substantially earlier harvests in crops grown in tunnels. For the past 10 years, we've been evaluating a wide variety of tomatoes under field conditions and in 2009 and 2010, planted the trial in the new Haygrove Super Solo tunnel at the PSU Southeast Research and Extension Center (SEAREC). There are now sufficient new varieties of fresh market slicer tomatoes on the market that a variety trial focused on tunnel production of slicing types was necessary. The past program has identified BHN 589, Scarlet Red, Conestoga, Brandyboy, Primo Red and Rocky Top to name but a few as varieties worthy of consideration in a replicated trial under tunnel conditions.

For 2010, this trial was set up to target only fresh market slicer types grown under High Tunnel conditions. Varieties were selected from the best of the tomato trials that were held at the Southeast Research and Extension Center (SEAREC) & Franklin Horticulture Center trials programs in 2007, 2008 and 2009, as well as promising new cultivars introduced by tomato seed companies. The trial and subsequent tastings were held at both the Southeast Research and Extension Center at Landisville and at the Franklin County Horticulture Center in Chambersburg. Tomatoes were evaluated for yield, flavor, and susceptibility to yellow shoulder. Both general public and commercial grower tastings were held at both sites in Mid-August.

The extreme heat of 2010 definitely had an impact on tunnel production as both overall production and packout were down from 2009 in comparable varieties. However, varieties such as BHN 589, Scarlet Red, BrandyBoy and Conestoga that did well in past years, still fared well, but did not create as much fruit this season.

Methodology:

Due to room limitations in the SEAREC High tunnel, each variety plot was replicated only twice in 5 plant plots. The tunnel ran east to west, therefore each variety had a plot in the 2 southern rows and again in the 2 northern rows. Every variety had a plot in an outside row and in an inside row. All varieties were

trellised using a modified Florida weave on 8' stakes to accommodate the taller indeterminate types.

All fruit were counted, rated as to #1, #2, or cull and evaluated for yellow shoulder / uneven ripening. Only #1 and #2 fruit were sized and weighed. Average selections of fully ripe #1 fruit were used in the tasting program. The tasting program for 2010 consisted of the annual public tasting at the Franklin County Cooperative Extension office on August 25, 2010 and a tasting at the vegetable growers twilight meeting on Thursday, August 5, 2010 at SEAREC.

Varieties in the program:

Scarlet Red
Brandy Master Red (removed from trial)
Finishline
Brandy Master Yellow (removed from trial)
Brandy Master Pink (removed from trial)
Mountain Glory
Rocky Top
BHN 871
BHN 901
BHN 961
Arkansas Traveler (removed from trial)
Redline
Moreton
Red Defender
Sweet Seedless
BHN 589
BrandyBoy
BHN 602
BHN 876
Mountain Fresh Plus
Conestoga
BHN 826
Fabulous
Fletcher
Quali T-23 (removed from trial)
BHN 189

Note on those 'removed from trial': After several harvests, these varieties failed to yield any #1's, so were removed to save labor. They are either poorly suited to high tunnel production, could not handle the heat of 2010 or fared poorly under the high nutrition program that we use that is based on BHN 589 and Scarlet Red tissue sampling requirements.

Summary of comments on the varieties:

Orange Slicers

BHN 876: Nice orange color in a very pretty tomato with a mild taste that borders on bland. Mildly acid that provides some balance to the mild sweet flavor. Hard and firm enough to slice, so will probably pack well. Of the 2 BHN orange varieties, this one is better adapted to tunnel conditions.

BHN 871: Nice orange color in a very pretty tomato with a mild taste that borders on bland. Mildly acid that provides some balance to the mild sweet flavor. Hard and firm enough to slice, so will probably pack well. More yellow interior than 876.

Orange Plums

BHN 901: Excellent yields of plum shaped fruit with a vibrant yellow color. Very little loss in grading. The flavor is what you would expect, mild and on the sweet side.

Round Red Slicers

Fabulous: This is probably the best all-around red slicer that's come through this program. The worst thing about Fabulous is it too soft for a #25 box, but will pack into #10 flats. The size is good for slicing, the texture is good, the flavor is good with that traditional balance between acid and sweet. We've never had any success growing this one in the field, but it meets many growers high tunnel requirements.

Moreton: Almost exactly same comments as Ramapo, but the panel found Morton to be a little more robust.

Sweet Seedless: While not the best looking tomato, our panelists found this one sweet with excellent flavor and good texture. The skin is too thin for packing, but an excellent direct market variety. On the small side.

Fletcher: Very attractive round red. Relatively firm, perhaps enough to pack. Great tasting.

BHN 826: Unusually even good marks from the entire tasting panel. Good looking, good flavor, very firm, yet juicy. Excellent balance between tart and sweet. Good yields even in the extreme heat of 2010.

BHN 961: This variety has been promoted as the replacement for BHN 589, but it is not even in the running. We experienced low yields, high variability in fruit size and poor packout.

BHN 589: This variety remains our trials program favorite due to the combination of good yield, high packout, and good flavor. If you can only grow one variety of round red, this is the one.

BHN 189: More compact than BHN 589, but otherwise very similar in appearance, packout and flavor. Perhaps a little earlier in a more normal year, but in the heat of 2010, this variety came in at about the same time.

Mountain Fresh plus: We always include this variety as a standard of sorts since so many growers rely on it. Good yields of round red fruit, but with very little flavor. Very firm fruit that stands up well to handling and shipping. In our tasting program, it is always near the bottom for flavor, but mid-pack for appearance.

Scarlet Red: While a little light on yield, the deep red appearance of this variety coupled with excellent flavor, make this a fair tradeoff. Several years ago we were instructed to sucker Scarlet Red very lightly to improve yields and it definitely helps. This variety is on our program favorites list.

Finishline: Dark red fruit with a good flavor that pack well. We've had this variety in our program for a few years. While it doesn't place at the top, it has never placed near the bottom either. It seems widely adapted, so is reliable under our changeable seasons.

Rocky Top: This variety handled the hot season better than most and produced a higher percentage of #1 fruit than most others in the trial. Good, but not exceptional flavor and good handling characteristics.

Mountain Glory: With only OK yields and fair flavor, this variety may only have limited usage. It does pack well as it is very firm.

BHN 602: Another good variety out of the BHN program. This one packs well, has good disease resistance and tastes like a real tomato.

Heritage Slicers

BrandyBoy: Dark pink and very uniform with a meaty flesh. Sweet, rich and spicy with a great balance in the flavor. Easily the top tasting tomato now several years in a row. Reasonable yields even in the extreme heat of the high tunnel during the 2010 growing season. Many small commercial growers have made this one their heritage tomato of choice.

Conestoga: An excellent choice for a high production heirloom appearing fruit. This variety adapts well to high tunnel production. Our tasters found it loaded with 'real tomato' taste.

Yields on a per acre basis

(Based on 4,840 plants per acre)

All weights in pounds

Variety	#1 count	#1 weight	#2 count	#2 weight	Total Marketable Weight
Scarlet Red	18,392	13,013	45,396	28,239	41,252
Finishline	14,036	8,789	53,240	35,394	44,183
Mountain Glory	11,132	9,264	45,496	30,006	39,270
Rocky Top	20,328	13,790	51,304	37,171	50,961
BHN 871	11,616	12,219	61,468	88,176	100,395
BHN 901	129,228	26,818	164,076	33,440	60,258
BHN 961	2,420	2,268	26,620	18,953	21,221
Redline	6,292	3,892	40,656	28,611	32,503
Moreton	968	592	17,908	8,540	9,132
Red Defender	6,292	5,163	75,020	47,947	53,110
Sweet Seedless	23,232	8,466	75,202	30,463	38,929
BHN 589	19,844	11,893	63,404	37,598	49,491
BrandyBoy	6,292	6,336	19,844	18,207	24,543
BHN 602	7,260	7,018	53,240	37,695	44,713
BHN 876	24,200	12,096	63,888	31,134	43,230
Mountain Fresh Plus	8,228	6,389	49,368	32,903	39,292
Conestoga	18,392	12,586	74,052	38,652	51,238
BHN 826	15,004	10,265	52,272	32,593	42,858
Fabulous	5,808	4,129	48,400	35,009	39,138
Fletcher	11,616	8,985	53,724	29,240	38,225
BHN 189	16,940	11,607	60,016	37,055	48,662