

Report to Pennsylvania Vegetable Marketing and Research Program and Pennsylvania Vegetable Growers Association

Title: Report, High Tunnel Fresh Market Slicer Tomato Variety Trial 2011

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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 11 years, we've been evaluating a wide variety of tomatoes under field conditions and since 2009, planted the trial in the new Haygrove Super Solo tunnel at the PSU Southeast Research and Extension Center (SEAREC) near Manheim, PA. Breeders continue to release new varieties of fresh market slicer tomatoes on the market so that variety trials' focused on tunnel production of slicing types remains important. 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 2011, this trial was set up to target only fresh market slicer types grown under High Tunnel conditions. Indicator varieties (also used as our comparison standards) 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 recent years. Entries in this years' program were selected from the many 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. A public tasting was held at the Chambersburg Extension office on August 24, 2011. Commercial growers had the opportunity to taste the cherry and grape tomatoes only at the August 3 Vegetable Growers Field day as the heat had severely slowed slicer tomato harvests during that period. A report on the grape and cherry tomatoes from this years' trial will be provided under separate cover.

The extreme heat of 2011 like that of 2010 definitely had a negative impact on tunnel production as both overall production, fruit set, and packout slowed substantially in the heat. However, varieties such as BHN 589, Arbason, BrandyBoy, BHN 1021, and Big Beef not only yielded well, but also packed out well.

Methodology:

Due to room limitations in the SEAREC High tunnel, each variety plot was replicated only twice in 5 plant plots. The tunnel as rebuilt for 2011 now runs North to South. Each variety had a plot in both an outside row and inside row and near the ends and near the

middle. 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 and were juiced to extract Brix values.

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.

Round Red Slicers

Arbason: This variety was easily the high yielder of the season. The fruit are dark red, firm and taste good. Definitely worth looking at again next season.

Big Beef: We included Big Beef in the trial because many high tunnel growers in VA consider this variety important. The flavor is excellent, the yields good, susceptibility to Yellow Shoulders moderate, but the fruit is very soft. An excellent alternative to Fabulous.

Fabulous: This is probably the best all-around red slicer that's come through this program. The worst thing about Fabulous is that it is too soft for a #25 box, but will pack into #10 flats. The large 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. 2010 was a better year for this variety as we harvested more #2's and culls in 2011 than in the past.

BHN 826: Unusually even good marks from our entire tasting panel. Good looking, good flavor, very firm, yet juicy. This variety has excellent flavor balance between tart and sweet. Performance was consistent between 2010 and 2011 with respectable yields and reasonable 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. Of all of the slicer varieties in this year's program, BHN 589 had the greatest percentage of #1's and fewest culls.

BHN 189: Slightly more compact than BHN 589, but otherwise very similar in appearance, packout and flavor. Until the extreme heat of the last two seasons, this variety seemed to be slightly earlier than 589, but in both 2010 and 2011, it came in a few days later.

BHN 1021: Good yields and good packout along with excellent flavor and appearance characterize this tomato. 1021 responded well in the high heat of 2011. Worthy of consideration for high tunnel growers and will definitely be repeated for 2012.

Big Dena: This variety had the lowest yield of the trial and the packout was poor as well. Colleagues report that this variety was better last season.

Charger: The color was not great and the flavor did not impress our judges, but the yields are OK and size good.

Defiant: Very dark red, smallish fruit on plants that are supposed to be resistant to Late blight characterize this variety. The flavor was good and very tomatoey, but the fruit run on the small size. We did not have any Late blight in our trials this year to rate it's resistance.

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, has good flavor and seems to be reliable under our changeable seasons.

Rocky Top: Last year, this variety handled the hot season better than most and produced a higher percentage of #1 fruit than most others in the trial. This year both the yield and packout were off. Good flavor for a firm tomato.

SX-605: This variety was provided by our friends at Seedway Seeds. It should have been labeled 'AX 605'. It is a German tomato that is popular in protected culture in Europe. The flavor was good, but the fruit size a little small. Reports were that it responded better to the growing conditions of 2010.

Tribeca: This variety seemed well-adapted to tunnel production with moderate yields of firm fruit that packed out well. Very typical, good tomato flavor.

Tribute: While the yields weren't bad, this variety did not pack well as it was more Yellow Should susceptible than most others in this years' program. Also, the fruit were a little light in color when compared to others in the trial. It may be worth a second look, but it certainly did not enjoy this seasons growing conditions.

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.

Delicious: High Brix levels and excellent yields make this variety one to consider if marketing 'ugly' fruit. As with most of the varieties in this class, Delicious is on the softer side, but the dark red color is very attractive.

Grandma's Pick: Specific portions of the consumer market respond well to 'lumpy' tomatoes. Grandma's Pick has a great appearance with good yields, but fares poorly against BrandyBoy in our tasting trials. Like BrandyBoy and Conestoga, it is very soft.

Variety	Yield / 10 plants	Yield / acre @5808 plants / acre	Average fruit size	Brix
BHN 1021	205.7 lb	104,660 lb	9 oz	5.1
Rocky Top	178.2 lb	90,668 lb	10 oz	5.0
BHN 876	173.4 lb	88,226 lb	7.5 oz	5.6
Big Dena	147 lb	85,400 lb	10.3 oz	5.0
BHN 189	183.26 lb	106,437 lb	9.6 oz	4.2
Arbason	260.1 lb	151,066 lb	6.6 oz	4.9
Grandma's Pick	202.2	117,438 lb	10.4 oz	5.6
Big Beef	217.6 lb	126,382 lb	9.5 oz	5.2
Finishline	161.7 lb	93,915 lb	10.7 oz	4.9
Tribeca	174.9	101,559 lb	10.8 oz	4.6
BHN 589	188.8 lb	109,655 lb	10.1 oz	5.0
Charger	187 lb	108,610 lb	11.5 oz	5.0
BHN 826	171.3 lb	99,491 lb	8.8 oz	5.8
BHN 871	161 lb	93,509 lb	8.9 oz	5.0
BrandyBoy	221.3 lb	128,531 lb	15.6 oz	5.4
SX-605	174 lb	101,117 lb	7 oz	5.0
Tribute	170.3 lb	98,910 lb	8.8 oz	4.5
Delicious	202.9 lb	117,844 lb	9.4 oz	5.9
Defiant	191 lb	110,932 lb	4.8 oz	4.2
Fabulous	162.3 lb	94,235 lb	10.3 oz	4.8

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Title: Report, High Tunnel Cherry and Grape Tomato Variety Trial 2011

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Introduction:

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Variety comments:

Five Star: 2011 was the first year for this variety from Johnny's Seeds. Both the commercial and consumer tasting panels gave it high marks for flavor and appearance. It has very few seeds and compares well with Smarty (our trial standard) based on yield. Tasters found it to have more tomato flavor while still having the characteristic sweetness of a grape tomato.

Red Pearl: This is another Johnny's Seeds variety. It rated very high with our consumer tasting panel, but was determined to be just another grape-type by the commercial growers. It was also a little soft on yield. The catalog labels it as having intermediate Late blight resistance, so that may be this varieties strong point. With no Late blight affecting the tunnel trials in 2011, no comparisons are available.

Sakura Honey: This pink grape tomato packs amazing flavor as tasters continually went back for more. If you are looking for a variety that will help you stand out at market, this may be the one. Excellent production, beautiful appearance and reasonable packout make Sakura Honey a real winner.

Smarty: Smarty or Smarty Grape has been our trial standard for red grape tomatoes for several years due to consistent yields, low cull rate and high brix levels. This year's trial was no different with Smarty demonstrating high yields and minimal culls.

Solid Gold: We've had many yellow grape and cherry tomatoes in our trials over the years, but could never find one from either category to compete with Sun Gold on flavor. Sun Gold has high production and amazing flavor, but cracks easily. Solid Gold comes close enough to Sun Gold in flavor while providing crack resistance and yields that commercial growers need.

Sweet Treats: With the exception of Sun Gold we seldom plant cherry tomatoes in our trials program due to the splitting of the fruit pre and post harvest. Sweet Treats (Sakata Seeds) may make us rethink that prohibition. This variety had the highest yields of the program with great tasting, beautiful fruit that run just a little large for a cherry tomato. Of the 6 varieties of cherry and grape tomatoes in this year's program, Sweet Treats kept producing as the temperatures cooled and the others no longer ripened their fruit.

Variety	Yield for 10 plants	Yields per acre at 5,808 plants per acre	Cull percentage	Average size	Brix
Sweet Treats	144.3 lb	83,798 lb	12%	.64 oz	7.1
Red Pearl	53.56 lb	32,850 lb	12%	.23 oz	7.3
Sakura Honey	84.03 lb	48,804 lb	11%	.4 oz	7.2
Solid Gold	79.61 lb	46,237 lb	9%	.29 oz	6.8
Smarty	87.92 lb	51,064 lb	6.5%	.27 oz	8.0
Five Star	87.36 lb	50,739 lb	7%	.3 oz	7.8