### TSH43





Fruit lye peeled at 18% for 60 seconds at 95°C

Note: For the peeling sample, all fruit were harvested from a section of the plot and any fruit with green showing on the exterior were removed, along with any fruit with any amount of rot, as well as fruit size less than 1 inch. This sample was peeled as above. Some of the paler fruit in the sample would probably have been removed by color sorters in a commercial processing plant.

YIELD AND QUALITY RESULTS FROM REPLICATED PLOTS AT TOMATO SOLUTIONS -	2019
** INDICATES AN EXCEPTION TO ABOVE, WHERE HYBRIDS WERE IN A DIFFERENT P	LOT

HYBRID	DAYS TO HARVEST	*TOTAL YIELD T/AC	FRUIT WT (G)	% CRACKED FRUIT (4' DROP)	PEELED COLOR RATING 1=VERY POOR 10= PERFECT	PEELED FRUIT FIRMNESS 1=VERY POOR 10= PERFECT	VISCOSITY (SECONDS THRU SAUCE TUBE) HIGHER IS THICKER	% SOLUBLE SOLIDS	a/b COLOR RATIO
TSH43	97.0	37.6	61.7	7.6	7.0	7.4	10.5	5.8	2.56
TSH04	97.0	37.2	48.7	5.0	7.0	7.8	8.5	5.4	2.42
TSH28	100.0	34.0	57.0	26.4	7.5	7.4	10.0	5.6	2.47
TSH44	102.0	51.8	53.0	8.0	7.0	7.4	12.8	5.3	2.45
H5108	102.0	43.4	54.3	16.5	4.6	8.1	6.8	5.4	2.30
** H1014	103.0	40.9	49.0	13.9	6.7	6.9	8.9	5.5	2.44
** TSH45	115.0	63.7	52.0	1.9	8.3	9.2	9.9	5.3	2.36

\*YIELD: Yields were recorded from plots planted at a 4 foot row spacing and 16 inch plant spacing for a population of approximately 8200 plants per acre. For small vine size hybrids such as TSH43, TSH04, etc., it is very probable that a higher yield would be achieved than reported here when planted commercially in twin rows at a population of 12-13,000 plants per acre.

#### **Executive Summary**

TSH43 is super-early with very high soluble solids and colour thus increasing paste recovery and quality. It is an excellent hybrid to start the season for both whole peel and paste production.

#### Description of TSH43

Maturity of TSH43 is very early, similar to TSH04 or slightly later. It is intended to replace TSH28 for those customers who have been using that hybrid, but has advantages which render it superior to other early maturing hybrids. Yield is similar to TSH04, slightly better than TSH28, and should be very competitive with other early hybrids when planted on twin rows (results above based on a relatively low population compared to commercial, as outlined in detail above). The soluble solids are very high compared to other hybrids at 5.8%, giving this hybrid an advantage in early paste production. Juice color is very high with an a/b ratio of 2.56, the highest of any hybrid tested in these trials. Fruit firmness is similar to TSH04 or H5108, and is enhanced by having 3 or 4 locules that provide cross-walls within the fruit for structural strength. Fruit size is slightly larger than most of the other early hybrids at 62 grams, compared to 49 grams for the smaller fruited H1014. Uniformity of fruit size is excellent as can be seen in the pictures of peeled fruit. Peeled color at a rating of 7.0 is similar to other TSH hybrids but is a significant improvement on H5108 which only rated 4.6 on our rating scale. Juice viscosity is also better than H5108. This hybrid would provide significant advantages both for early paste production, and for early production of juice and whole peel products.

### TSH44











Fruit lye peeled at 18% for 60 seconds at 95°C

Note: For the peeling sample, all fruit were harvested from a section of the plot and any fruit with green showing on the exterior were removed, along with any fruit with any amount of rot, as well as fruit size less than 1 inch. This sample was peeled as above. Some of the paler fruit in the sample would probably have been removed by color sorters in a commercial processing plant.

YIELD AND QUALITY RESULTS FROM REPLICATED PLOTS AT TOMATO SOLUTIONS - 2019 \*\* INDICATES AN EXCEPTION TO ABOVE, WHERE HYBRIDS WERE IN A DIFFERENT PLOT

HYBRID	DAYS TO HARVEST	*TOTAL YIELD T/AC	FRUIT WT (G)	% CRACKED FRUIT (4' DROP)	PEELED COLOR RATING 1=VERY POOR 10= PERFECT	PEELED FRUIT FIRMNESS 1=VERY POOR 10= PERFECT	VISCOSITY (SECONDS THRU SAUCE TUBE) HIGHER IS THICKER	% SOLUBLE SOLIDS	a/b COLOR RATIO
TSH43	97.0	37.6	61.7	7.6	7.0	7.4	10.5	5.8	2.56
TSH04	97.0	37.2	48.7	5.0	7.0	7.8	8.5	5.4	2.42
TSH28	100.0	34.0	57.0	26.4	7.5	7.4	10.0	5.6	2.47
TSH44	102.0	51.8	53.0	8.0	7.0	7.4	12.8	5.3	2.45
H5108	102.0	43.4	54.3	16.5	4.6	8.1	6.8	5.4	2.30
** H1014	103.0	40.9	49.0	13.9	6.7	6.9	8.9	5.5	2.44
** TSH45	115.0	63.7	52.0	1.9	8.3	9.2	9.9	5.3	2.36

\*YIELD: Yields were recorded from plots planted at a 4 foot row spacing and 16 inch plant spacing for a population of approximately 8200 plants per acre. For small vine size hybrids such as TSH43, TSH04, etc., it is very probable that a higher yield would be achieved than reported here when planted commercially in twin rows at a population of 12-13,000 plants per acre.

#### **Executive Summary**

TSH44 matures at the same time as H5108 with 21% higher yield, similar size and solids, but superior colour for both paste and wholepack. Fruit will hold without softening for up to a month or more after peak ripeness for machine harvest.

#### Description of TSH44

Maturity of TSH44 is the same as H5108 at approximately 102 days from transplanting. Yield is significantly higher at 52 tons/acre compared to 43 tons/acre for H5108, an increase of 21%. Percent soluble solids are similar. Juice color is very high at an a/b ratio of 2.45 compared to 2.30 for H5108. Fruit weight is similar at about 53 grams, and uniformity of fruit size is excellent as can be seen from the peeled fruit picture. Fruit firmness is superior due to the presence of genes reducing the amount of enzyme that causes fruit softening during ripening. This firmness and enhanced field holdability is maintained for an extended period of time (up to a month) after the fruit have ripened sufficiently for machine harvest. Peeled color rating was 7.0, significantly better than 4.6 recorded for H5108. Juice viscosity at 12.8 seconds through the sauce tube was double that of H5108. This hybrid would provide significant benefits in terms of yield, color and product recovery for both paste and whole peeled product.

## TSH45











Fruit lye peeled at 18% for 60 seconds at 95°C

Note: For the peeling sample, all fruit were harvested from a section of the plot and any fruit with green showing on the exterior were removed, along with any fruit with any amount of rot, as well as fruit size less than 1 inch. This sample was peeled as above. Some of the paler fruit in the sample would probably have been removed by color sorters in a commercial processing plant.

YIELD AND QUALITY RESULTS FROM REPLICATED PLOTS AT TOMATO SOLUTIONS - 2019 \*\* INDICATES AN EXCEPTION TO ABOVE, WHERE HYBRIDS WERE IN A DIFFERENT PLOT

HYBRID	DAYS TO HARVEST	*TOTAL YIELD T/AC	FRUIT WT (G)	% CRACKED FRUIT (4' DROP)	PEELED COLOR RATING 1=VERY POOR 10= PERFECT	PEELED FRUIT FIRMNESS 1=VERY POOR 10= PERFECT	VISCOSITY (SECONDS THRU SAUCE TUBE) HIGHER IS THICKER	% SOLUBLE SOLIDS	a/b COLOR RATIO
TSH43	97.0	37.6	61.7	7.6	7.0	7.4	10.5	5.8	2.56
TSH04	97.0	37.2	48.7	5.0	7.0	7.8	8.5	5.4	2.42
TSH28	100.0	34.0	57.0	26.4	7.5	7.4	10.0	5.6	2.47
TSH44	102.0	51.8	53.0	8.0	7.0	7.4	12.8	5.3	2.45
H5108	102.0	43.4	54.3	16.5	4.6	8.1	6.8	5.4	2.30
** H1014	103.0	40.9	49.0	13.9	6.7	6.9	8.9	5.5	2.44
** TSH45	115.0	63.7	52.0	1.9	8.3	9.2	9.9	5.3	2.36

\*YIELD: Yields were recorded from plots planted at a 4 foot row spacing and 16 inch plant spacing for a population of approximately 8200 plants per acre. For small vine size hybrids such as TSH43, TSH04, etc., it is very probable that a higher yield would be achieved than reported here when planted commercially in twin rows at a population of 12-13,000 plants per acre.

#### **Executive Summary**

# TSH45 is a mid-season hybrid with outstanding yield, and firmnesss is extremely good both before and after peeling. Fruit will hold without softening for up to a month or more after peak ripeness for machine harvest.

#### Description of TSH45

Maturity of TSH45 is mid-season at 115 days from transplanting so that if transplanted about May 10th it should be ready for machine harvest in early September (September 2<sup>nd</sup> in a normal year). Yield is outstanding in excess of 60 tons/acre due to a large vine size and excellent setting ability. Soluble solids at 5.3% is similar to most mid-season types with high yields. Juice color is better than H5108, but slightly less than the very high color of the early TSH hybrids. The peeled color rating at 8.3 was the highest recorded in the trial, and is partly due to the excellent color uniformity as can be seen from the picture. Fruit weight is about 52 grams, better than H1014, but not as large as TSH43. Size uniformity is excellent as can be seen from the peeled fruit picture. Fruit firmness after peeling was outstanding with a rating of 9.2, the highest recorded in the trial. Fruit firmness is superior due to the presence of genes reducing the amount of enzyme that causes fruit softening during ripening. This firmness and enhanced field holdability is maintained for an extended period of time (up to a month) after the fruit have ripened sufficiently for machine harvest. Fruit firmness is also enhanced by thick fruit walls and ovate fruit shape. Juice viscosity was 9.9 seconds through the sauce tube, as high or higher than any other hybrid in this trial, but not as high as TSH44. The extremely good fruit firmness enhances field holdability and peeled fruit recovery, not only for lye peel systems, but also for steam peeled processes. This hybrid offers significant advantages in terms of maintaining high quality for an extended period of time in machine harvest systems, while producing very high yields. It would be suitable for both paste and whole peel production.