

Cornell Cooperative Extension

Eastern NY Commercial Horticulture Program

2020 Tomato Variety Trial



Trial Information

- Trial was in Columbia County
- Conventional
- Determinate varieties only with a focus on large beefsteaks
- Seeded May 7th, transplanted June 12th
- Harvested four times with one additional harvest with no data collection
- Harvested weekly from 8/21/20 to 10/2/20
- Grown on black plastic mulch and drip irrigated, 24" spacing in-row, 60" centers

Bejo 3212

- From Bejo Seeds/Gowan
- High resistance to Fusarium Wilt (0,1,2) and tomato yellow leaf curl
- Medium red flesh
- Lots of seed cavity and gel. Medium core. Not fibrous. Flavor okay, soft texture
- 17% of total yield was culls, primarily radial crack, blossom end rot and too small fruit



Total Marketable Weight (lbs)	Yield of Marketable Fruit by Size Distribution (lbs)			% of Marketable Yield by Size Distribution		
	Large (>0.8lbs)	Medium (0.5 to 0.8 lbs)	Small (0.2 to 0.5 lbs)	Large (>0.8lbs)	Medium (0.5 to 0.8 lbs)	Small (0.2 to 0.5 lbs)
21,589	2,369	8,086	11,135	11	37	52

Bejo 3353

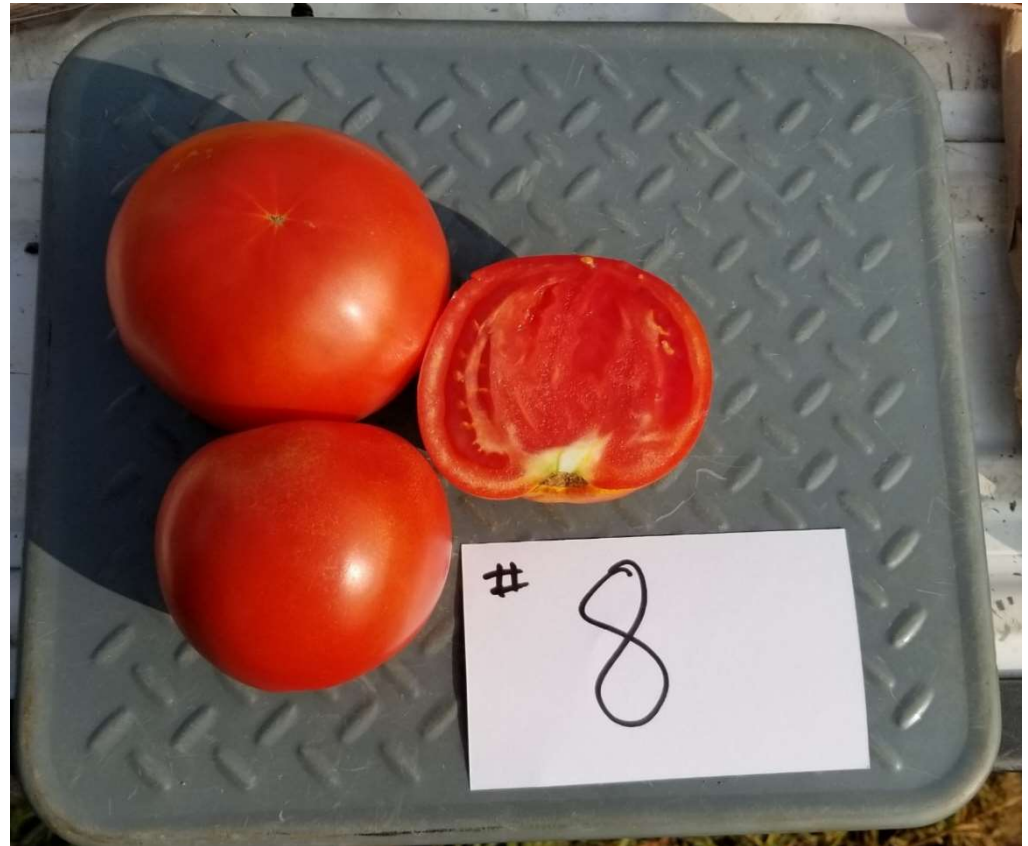
- From Seedway/Gowan
- High resistance to *Fusarium* wilt, *Verticillium* wilt, tomato spotted wilt, and intermediate resistance to tomato yellow leaf curl virus
- Orange red flesh color
- Small core. A lot of seed cavity and gel. Thick skin and very firm even when fully ripe
- Flavor okay and very juicy
- Uniform in size and shape
- 15% of total yield was culls, primarily radial cracks and too small fruit



	Yield of Marketable Fruit by Size Distribution (lbs)			% of Marketable Yield by Size Distribution		
	Large (>0.8lbs)	Medium (0.5 to 0.8 lbs)	Small (0.2 to 0.5 lbs)	Large (>0.8lbs)	Medium (0.5 to 0.8 lbs)	Small (0.2 to 0.5 lbs)
Total Marketable Weight (lbs)	9,692	4,819	4,356	51	26	23

Bejo 3437

- From Bejo Seeds/Gowan
- High resistance to Fusarium Wilt (0,1,2), tomato spotted wilt and intermediate resistance to tomato yellow leaf curl
- Medium to dark red flesh
- Small core. A lot of seed cavity and gel. Delicious, Flesh is firm but skin is thin and there isn't any chew
- Best tasting in the trial
- Highest yielding in marketable weight
- 11% of total yield was culls, primarily radial cracks and zippers



Total Marketable Weight (lbs)	Yield of Marketable Fruit by Size Distribution (lbs)			% of Marketable Yield by Size Distribution		
	Large (>0.8lbs)	Medium (0.5 to 0.8 lbs)	Small (0.2 to 0.5 lbs)	Large (>0.8lbs)	Medium (0.5 to 0.8 lbs)	Small (0.2 to 0.5 lbs)
25,809	13,912	7,487	4,410	54	29	17

Camaro

- From Sakata Seeds
- High resistance to Alternaria stem canker, Fusarium wilt, Verticillium wilt, intermediate resistance to grey leaf spot, tomato yellow leaf curl
- Orange-red flesh color
- Strong tomato flavor, firm texture with thin skin, good flavor
- Highest % of large fruit by weight
- 26% of total yield was culls, primarily radial cracks and zippers



	Yield of Marketable Fruit by Size Distribution (lbs)			% of Marketable Yield by Size Distribution		
	Large (>0.8lbs)	Medium (0.5 to 0.8 lbs)	Small (0.2 to 0.5 lbs)	Large (>0.8lbs)	Medium (0.5 to 0.8 lbs)	Small (0.2 to 0.5 lbs)
Total Marketable Weight (lbs)	15,491	4,057	1,742	73	19	8

Emmylou

- From Seedway/Gowan
- High resistance to Fusarium wilt, tomato spotted wilt, tomato yellow leaf curl
- Orangey red flesh color
- Meaty texture. Pop of nice flavor with first bite. Skin lingers
- Oddly lobed shape in some fruit
- 42% of total yield was culls, primarily radial cracks and blossom end rot



	Yield of Marketable Fruit by Size Distribution (lbs)			% of Marketable Yield by Size Distribution		
Total Marketable Weight (lbs)	Large (>0.8lbs)	Medium (0.5 to 0.8 lbs)	Small (0.2 to 0.5 lbs)	Large (>0.8lbs)	Medium (0.5 to 0.8 lbs)	Small (0.2 to 0.5 lbs)
10,427	5,146	2,341	2,940	49	22	28

Galahad

- From Johnny's Selected Seeds/Gowan
- High resistance to *Fusarium* wilt, gray leaf spot, late blight, nematodes, tomato spotted wilt virus, and *Verticillium* wilt.
- Pink flesh
- Long narrow core. Firm texture. Pop of flavor, pretty tasty
- Fruit either large or small
- 78% of total yield was culls, all radial crack issues. This was a severe issue



	Yield of Marketable Fruit by Size Distribution (lbs)			% of Marketable Yield by Size Distribution		
	Large (>0.8lbs)	Medium (0.5 to 0.8 lbs)	Small (0.2 to 0.5 lbs)	Large (>0.8lbs)	Medium (0.5 to 0.8 lbs)	Small (0.2 to 0.5 lbs)
Total Marketable Weight (lbs)	626	3,321	1,606	11	60	29

Grand Marshall

- From Johnny's Selected Seeds
- High resistance to *Alternaria* stem canker, *Fusarium* wilt, *Verticillium* wilt and intermediate resistance to gray leaf spot, and tomato yellow leaf curl virus
- Pinky-orange flesh
- Small core. White fibers through the whole tomato, harder texture. Unpleasant taste
- 18% of total yield was culls, primarily radial cracks and blossom end rot



Total Marketable Weight (lbs)	Yield of Marketable Fruit by Size Distribution (lbs)			% of Marketable Yield by Size Distribution		
	Large (>0.8lbs)	Medium (0.5 to 0.8 lbs)	Small (0.2 to 0.5 lbs)	Large (>0.8lbs)	Medium (0.5 to 0.8 lbs)	Small (0.2 to 0.5 lbs)
19,983	10,890	4,955	4,138	54	25	21

Jolene

- From Seedway/Gowan
- High resistance to *Fusarium* wilt, *Verticillium* wilt, Fusarium crown and root rot and tomato yellow leaf curl virus
- Medium red flesh
- Medium to large core. Fair amount of white fibers in side walls. Lots of seed cavity and gel and skin is tough. Texture is a little chewy due to skin
- Very pleasant flavor and very juicy
- 10% of total yield was culls, primarily radial cracks and blossom end rot
- Had lowest % of culls



	Yield of Marketable Fruit by Size Distribution (lbs)			% of Marketable Yield by Size Distribution		
	Large (>0.8lbs)	Medium (0.5 to 0.8 lbs)	Small (0.2 to 0.5 lbs)	Large (>0.8lbs)	Medium (0.5 to 0.8 lbs)	Small (0.2 to 0.5 lbs)
Total Marketable Weight (lbs)	8,930	7,705	3,839	44	38	19

Mountain Merit

- Control – standard variety from grower
- High resistance to tomato spotted wilt and intermediate resistance to early blight and nematodes
- Pink flesh
- Small core with more seed cavity and gel space. Firm texture. Seeds unpleasant and too many. Flavor is okay
- Nice shape and size
- 48% of total yield was culls, primarily radial cracks



	Yield of Marketable Fruit by Size Distribution (lbs)			% of Marketable Yield by Size Distribution		
Total Marketable Weight (lbs)	Large (>0.8lbs)	Medium (0.5 to 0.8 lbs)	Small (0.2 to 0.5 lbs)	Large (>0.8lbs)	Medium (0.5 to 0.8 lbs)	Small (0.2 to 0.5 lbs)
14,729	6,452	4,410	3,866	44	30	26

Red Snapper

- From Seedway
- High resistance to Alternaria stem canker, Fusarium wilt, Verticillium wilt, intermediate resistance to grey leaf spot, tomato spotted wilt, tomato yellow leaf curl
- Orangey-red flesh color
- Small core
- Okay texture, okay flavor
- Medium stem scar and blossom scar
- Highest total harvest and most large fruit by weight
- 15% of total yield was culls, primarily radial cracks



	Yield of Marketable Fruit by Size Distribution (lbs)			% of Marketable Yield by Size Distribution		
	Large (>0.8lbs)	Medium (0.5 to 0.8 lbs)	Small (0.2 to 0.5 lbs)	Large (>0.8lbs)	Medium (0.5 to 0.8 lbs)	Small (0.2 to 0.5 lbs)
Total Marketable Weight (lbs)	16,226	5,826	3,485	64	23	14

Roadster

- From Seedway
- High resistance to Alternaria stem canker, Fusarium wilt, Fusarium crown and root rot, Verticillium wilt, intermediate resistance to grey leaf spot, tomato spotted wilt
- Orangey-red flesh color
- Dense, meaty texture. Skin is a little thick. Juicy and flavor is good.
- Uniform in size and shape
- 29% of total yield was culls, primarily radial cracks, but had blossom end rot, concentric cracks and rain check in some fruit



	Yield of Marketable Fruit by Size Distribution (lbs)			% of Marketable Yield by Size Distribution		
	Large (>0.8lbs)	Medium (0.5 to 0.8 lbs)	Small (0.2 to 0.5 lbs)	Large (>0.8lbs)	Medium (0.5 to 0.8 lbs)	Small (0.2 to 0.5 lbs)
Total Marketable Weight (lbs)	9,964	5,772	2,723	54	31	15

STM2255

- From Seedway/Gowan
- High resistance to *Fusarium* wilt, *Fusarium* crown and root rot, *Verticillium* wilt, and intermediate resistance to grey leaf spot, tomato spotted wilt and tomato yellow leaf curl virus
- Light orange flesh
- Meaty, little seed and gel space. Small core. Pleasant flavor and nice firm texture. Juicy.
- 18% of total yield was culls, primarily radial crack, blossom end rot and zippers



Total Marketable Weight (lbs)	Yield of Marketable Fruit by Size Distribution (lbs)			% of Marketable Yield by Size Distribution		
	Large (>0.8lbs)	Medium (0.5 to 0.8 lbs)	Small (0.2 to 0.5 lbs)	Large (>0.8lbs)	Medium (0.5 to 0.8 lbs)	Small (0.2 to 0.5 lbs)
20,065	11,298	5,091	3,675	56	25	18

TastiLee

- From High Mowing Seeds
- High resistance to *Fusarium* wilt and *Verticillium* wilt
- Dark orange flesh
- Juicy with good texture. Flavor is decent, skin is decent.
- Produced the highest number of fruit
- Best for quart basket market due to overall smaller size produced
- Large blossom scar on almost all fruit
- 11% of total yield was culls, primarily too small fruit and radial cracks



	Yield of Marketable Fruit by Size Distribution (lbs)			% of Marketable Yield by Size Distribution		
	Large (>0.8lbs)	Medium (0.5 to 0.8 lbs)	Small (0.2 to 0.5 lbs)	Large (>0.8lbs)	Medium (0.5 to 0.8 lbs)	Small (0.2 to 0.5 lbs)
Total Marketable Weight (lbs)	3,528	16,335	13,634	11	49	41

**Thank you to Seedway and Sakata
Seed for contributing seed to our
trial.**

**Thank you to Altobelli Family Farm
for hosting the trial**



Table 1: Harvest Weight, Marketable Weight and Size Grading of Fruit Per Acre

Variety	Source	Total Harvest Weight	Total Harvest #	Total Marketable Weight	Total Marketable #	Weight Large Fruit	# Large Fruit	Weight Medium Fruit	# Medium Fruit	Weight Small Fruit	# Small Fruit
Bejo 3212	Bejo Seeds/Gowan	26163	54178	21589	43832	2369	3267	8086	14157	11135	26408
Bejo 3353	Bejo Seeds/Gowan	22134	35120	18867	28859	9692	11707	4819	7623	4356	9529
Bejo 3437	Bejo Seeds/Gowan	29131	42199	25809	37298	13912	15246	7487	11979	4410	10073
Camero	Sakata Seed	28613	35665	21290	26953	15491	16335	4057	6534	1742	4084
Emmylou	Seedway/Gowan	17832	26681	10427	16335	5146	5445	2341	3812	2940	7079
Galahad	Johnny's/Gowan	25374	40565	5554	9529	626	817	3321	5173	1606	3539
Grand Marshall	Johnny's Selected Seeds	24285	35393	19983	28586	10890	11979	4955	7351	4138	9257
Jolene	Seedway/Gowan	22869	38115	20473	34031	8930	10890	7705	13340	3839	9801
Mountain Merit	Bejo Seeds	28260	42743	14729	23141	6452	7351	4410	7079	3866	8712
Red Snapper	Seedway	30193	44105	25537	36754	16226	17696	5826	10618	3485	8440
Roadster	Sakata Seed	25973	37026	18459	25592	9964	10890	5772	8712	2723	5990
STM2255	Seedway/Gowan	24530	37026	20065	29403	11298	12796	5091	7895	3675	8712
TastiLee	High Mowing Seeds	37462	74923	33498	63598	3528	4356	16335	27443	13634	31799

Seeded 5/7, transplanted 6/12

Harvested five times on a weekly basis

Harvested weekly from 8/21/20 to 9/18/20

Grown on black plastic with drip irrigation, 24" spacing in-row, 60" centers

Table 2: Percentage of Fruit Weight by Size Grading and Cull Information Per Acre

Variety	Total Harvest Weight	Total Harvest #	Total Marketable Weight	Total Marketable #	% Large Fruit Weight	% Medium Fruit Weight	% Small Fruit Weight	Total Cull Weight	Total Cull #	% Culls of Total Harvest Weight
B-3212	26163	54178	21589	43832	11%	37%	52%	4574	10346	17%
Bejo 3353	22134	35120	18867	28859	51%	26%	23%	3267	6262	15%
Bejo 3437	29131	42199	25809	37298	54%	29%	17%	3321	4901	11%
Camero	28613	35665	21290	26953	73%	19%	8%	7324	8712	26%
Emmylou	17832	26681	10427	16335	49%	22%	28%	7405	10346	42%
Galahad	25374	40565	5554	9529	11%	60%	29%	19820	31037	78%
Grand Marshall	24285	35393	19983	28586	54%	25%	21%	4302	6806	18%
Jolene	22869	38115	20473	34031	44%	38%	19%	2396	4084	10%
Mountain Merit	28260	42743	14729	23141	44%	30%	26%	13531	19602	48%
Red Snapper	30193	44105	25537	36754	64%	23%	14%	4655	7351	15%
Roadster	25973	37026	18459	25592	54%	31%	15%	7514	11435	29%
STM2255	24530	37026	20065	29403	56%	25%	18%	4465	7623	18%
TastiLee	37462	74923	33498	63598	11%	49%	41%	3964	11326	11%

Seeded 5/7, transplanted 6/12

Harvested five times on a weekly basis

Harvested weekly from 8/21/20 to 9/18/20

Grown on black plastic with drip irrigation, 24" spacing in-row, 60" centers

Table 3: Harvest Weight, Marketable Weight and Size Grading of Fruit by 25 Pound Boxes Per Acre

Variety	Total Harvest Weight	Total Marketable Weight	# 25 Pound Boxes of Marketable Fruit	Weight Large Fruit	# 25 Pound Boxes of Large Fruit	Weight Medium Fruit	# 25 Pound Boxes of Medium Fruit	Weight Small Fruit	# 25 Pound Boxes of Small Fruit
B-3212	26163	21589	864	2369	95	8086	323	11135	445
Bejo 3353	22134	18867	755	9692	388	4819	193	4356	174
Bejo 3437	29131	25809	1032	13912	556	7487	299	4410	176
Camero	28613	21290	852	15491	620	4057	162	1742	70
Emmylou	17832	10427	417	5146	206	2341	94	2940	118
Galahad	25374	5554	222	626	25	3321	133	1606	64
Grand Marshall	24285	19983	799	10890	436	4955	198	4138	166
Jolene	22869	20473	819	8930	357	7705	308	3839	154
Mountain Merit	28260	14729	589	6452	258	4410	176	3866	155
Red Snapper	30193	25537	1021	16226	649	5826	233	3485	139
Roadster	25973	18459	738	9964	399	5772	231	2723	109
STM2255	24530	20065	803	11298	452	5091	204	3675	147
TastiLee	37462	33498	1340	3528	141	16335	653	13634	545

Seeded 5/7, transplanted 6/12

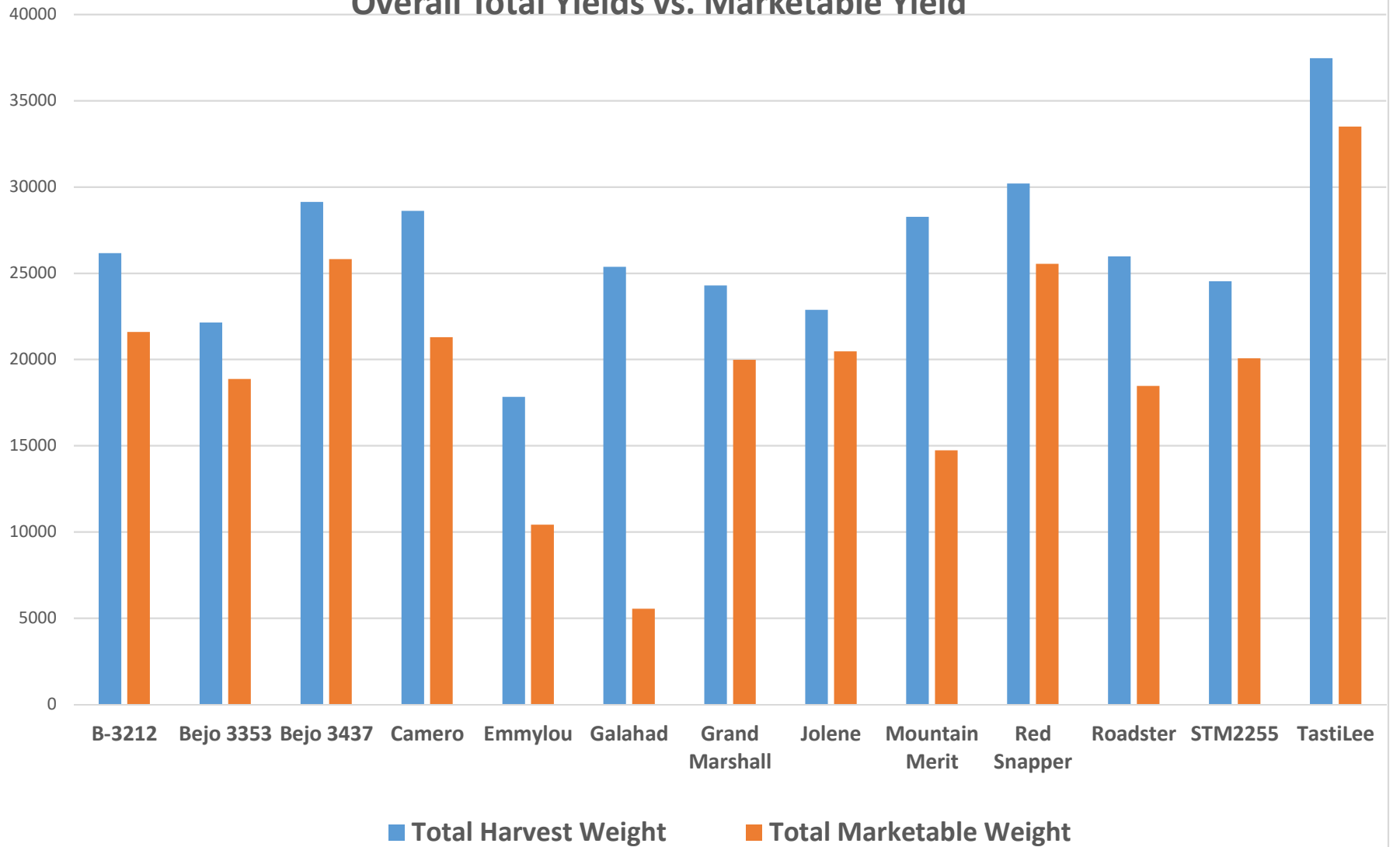
Harvested five times on a weekly basis

Harvested weekly from 8/21/20 to 9/18/20

Grown on black plastic with drip irrigation, 24" spacing in-row, 60" centers

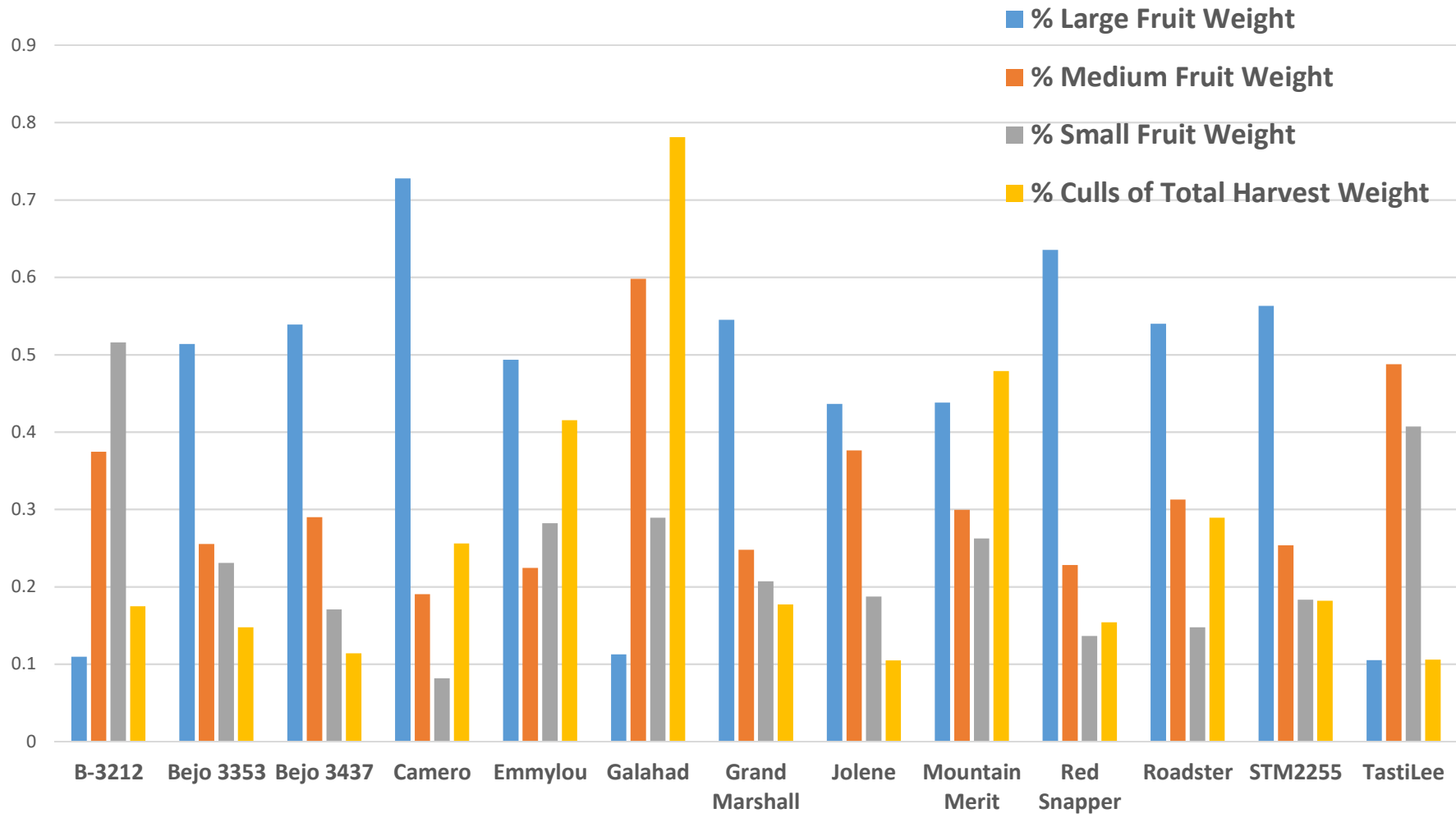
2020 Beefsteak Tomato Variety Trial

Overall Total Yields vs. Marketable Yield



2020 Beefsteak Tomato Variety Trial

Percentage of Total Yield by Size Category



2020 Beefsteak Tomato Variety Trial

Number of 25 Pound Boxes by Size Category

- # 25 Pound Boxes of Large Fruit
- # 25 Pound Boxes of Medium Fruit
- # 25 Pound Boxes of Small Fruit

