

NEW YORK STATE 2014 PROCESSING PEA CULTIVAR TRIAL REPORT

James Ballerstein - Research Support Specialist, Horticultural Sciences
New York State Agricultural Experiment Station - Cornell University, Geneva, New York

Stephen Reiners - Associate Professor, Horticultural Sciences
New York State Agricultural Experiment Station - Cornell University, Geneva, New York

PROCEDURE AND MATERIALS

Location: NYS Agricultural Research Farm, Geneva - soil type - silt loam. **Tillage** - Conventional. **Fertilizer:** broadcast 400 lb/A of 8-14-21 and worked in. **Planter** - Modified Hege 80 (cone type). **Planting Date** - 5/7. Picking started on 6/27 and we finished on 7/13. **Herbicide** - Dual post plant 5/7. **Plot Size:** 7 rows by 30 ft. **Row Width:** 6 inches, Row length: 30 ft. **In-row Spacing:** 1400 seeds were placed in the cone for the 30 ft plot - theoretically this is 6.4 seeds per foot or 557,568 seeds per acre. Our processor has asked us to shoot for 550,000 seeds per acre). **Insecticide** - none. **Experimental Design** - Randomized split block design, 4 replications (3 replications were harvested and another was left for demonstration). **Model TG4EI Integrating Texturegagage** - measure for maturity.

The objective of this trial was to compare a number of normal leaf and afile type pea varieties for yield and other quality characteristics. This was accomplished in cooperation with the pea processor in New York in an attempt to find new, higher quality, and disease resistant varieties that are adapted to our climate and soil conditions. Evaluation of processed product was held on 11/6 for processing and seed company representatives.

Yield of seven rows by 5 feet per replication (**35 Row feet**) was obtained by pulling the plants and hand picking the pods. Two harvests were made if possible to plot yield increase and also tenderometer reading increase. A target tenderometer value of 110 was used for the final harvest. A stationary sheller was used to remove berries from the harvested pods. Tenderometer readings were taken on each replication and averaged for the report. Pea berries were hand sieved with Seedburo hand testing screens. See following table for details.

Table 1. Sieve size diameters.

Sieve Size	Diameter of circular Opening in MM (inches)	Will not pass through	Will pass through
1	6.35 (16/64)		7.1 (18/64)
2	7.1 (18/64)		7.9 (20/64)
3	7.9 (20/64)		8.7 (22/64)
4	8.7 (22/64)		9.5 (24/64)
5	9.5 (24/64)		10.3 (26/64)
6	10.3 (26/64)		11.1 (28/64)

Temperature and moisture Conditions

Soil conditions were good when planting with good moisture and warm temperatures. Stands varied but most were good to very good. Growing conditions were good. Moisture was plentiful and heat was not an issue until the last part of harvest. Yields reflected the plant stands variety potential and ranged from 6000 lbs per acre to 12000 lbs per acre. It was a very good, uniform trial. See the weather insert at the end of the summary for a breakdown of temperatures and precipitation over the growing season. Please direct any questions to the following mailing address, phone number or email address.

Contact information - Jim Ballerstein, 315-787-2223 (phone) jwb2@cornell.edu (email)

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Special thanks to Gilbert Scott who sampled and made it possible for us to harvest at the most optimum tenderometer reading. He also was mainly responsible for the comments that are at the end of the report.

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Table 2 - Cultivar List and Maturity From Seed Source

Cultivar	HU	Seed Source	Leaf Type	Seed Treatment	Seed Count/lb	Germ. %	Sieve Size	Nodes to Flower
Spring (std)	1155	Seminis	Normal	A, C, Cr	2124	95	3.9	9 to 10
BSC2014	1160	Brotherton	Normal	Maxim/Apron	2408	99		9
433	1170	GV	Afila	Maxim/Apron/ Cruiser	na	na		7 to 8
ES 414 (std)	1195	Seminis	Normal	A, C, Cr	2855	100	3.55	10
SV0956QH	1205	Seminis	Normal	A, C, Cr	2948	95	3.2	10
437	1230	GV	Normal	Maxim/Apron/ Cruiser	2456	96		
EXP-16505	1250	Crites	Normal	Maxim, Apron XL	2223	98		
CS-430AF	1260	Crites	Afila	Maxim, Apron XL	2041	94		
490	1280	GV	Normal	Maxim/Apron/ Cruiser	2300	98		
SV0955QH	1290	Seminis	Normal	A, C, Cr	2732	97		
Topps	1300	PLS	Normal	Maxim/Apron/ Cruiser	2475	95	3.5	na
BSC5051	1300	Brotherton	Normal	Maxim/Apron	2224	91		10
Tonic (std)	1300	Brotherton	Normal	Maxim/Apron	2067	91	3.5	10
Portage (std)	1325	Crites	Afila	Maxim, Apron XL	2268	97	3.78	10
SV0935QF	1340	Seminis	DetA	A, C, Cr	2513	95		
PLS226	1340	PLS	Afila	Maxim/Apron/ Cruiser	2103	95	3.5	10
PLSM-14	1350	PLS	Normal	Maxim/Apron/ Cruiser	2564	98	3.7	9
SV 0969QH	1360	Seminis	Normal	A, C, Cr	2877	95		
PLS 228	1380	PLS	Afila	Maxim/Apron/ Cruiser	2193	95	3.5	10
CS436AF	1390	Crites	Afila	Maxim, Apron XL	2191	96		
CS-424F	1405	Crites	Normal	Maxim, Apron XL	2214	97	4	
Reliance	1420	Seminis	DetA	A, C, Cr	2953	90	3.2	
SV8112QH	1430	Seminis	DetA	A, C, Cr	2621	94		
PLS 167	1440	PLS	Afila	Maxim/Apron/ Cruiser	3105	95	3.1	10
SV1058QH	1450	Seminis	DetA	A, C, Cr	2299	95		
CS-437F	1460	Crites	Normal	Maxim, Apron XL	2457	97		
8540794 DA 1470	1470	Seminis	DetA	A, C, Cr	3318	95		

Table 2 continued:

Cultivar	HU	Seed Source	Leaf Type	Seed Treatment	Seed Count/lb	Germ. %	Sieve Size	Nodes to Flower
SV7688QF	1480	Seminis	DetA	A, C, Cr	2659	95		
Exp-32963	1490	Crites	Normal	Maxim, Apron XL	2495	97		
Bolero (std)	1510	Pureline	Normal	Maxim/Apron/ Cruiser	2174	95	3.75	14
SV 0893QF	1525	Seminis	Normal	A, C, Cr	2377	95		
SV1036QF	1525	Seminis	Afila	A, C, Cr	2109	96	3.8	
Ricco	1530	GV	Afila	Maxim/Apron/ Cruiser	na	na	3.7	16
BSC3661	1530	Brotherton	Normal	Maxim/Apron	2285	97		15
BSC2030	1532	Brotherton	Normal	Maxim/Apron	2272	97		10
Hudson	1540	Crites	Normal	Maxim, Apron XL	2489	94		
PLS 595	1540	PLS	Afila	Maxim/Apron/ Cruiser	2456	97		13
PLS 10	1540	PLS	Afila	Maxim/Apron/ Cruiser	2267	95	3.6	11
513	1550	GV	Normal	Maxim/Apron/ Cruiser	2475	95		
552	1560	GV	Afila	Maxim/Apron/ Cruiser	3226	98		
529	1560	GV	Afila	Maxim/Apron/ Cruiser	2421	91		
506	1560	GV	Afila	Maxim/Apron/ Cruiser	2568	93		
BSC4241A	1570	Brotherton	Normal	Maxim/Apron	2268	94		15
BSC985	1570	Brotherton	Afila	Maxim/Apron	4826	98		15
507	1580	GV	Afila	Maxim/Apron/ Cruiser	na	na		
PLS 585	1580	PLS	Afila	Maxim/Apron/ Cruiser	3195		3.1	10
PLS 685	1600	PLS	Afila	Maxim/Apron/ Cruiser	2242			
Grundy	1600	GV	Normal	Maxim/Apron/ Cruiser	2150	97	3.8	16
Mundial	1600	Seminis	Normal	A, C, Cr	3534	100	3.25	15-16
Prometheus	1650	Seminis	Normal	A, C, Cr	3017	95	3.4	16

Table 3. Plant Characteristics

Cultivar	Plant Stand Rating	Plant Vigor Rating	Canopy Height (in.)	Plant Habit Rating (at Harvest)	Vine Length (in.)	Heat Units to First Blossom	Root Rot Rating 7/12	Root Rot Rating 7/20
CS-430AF	3.9	3.8	18	3.8	23	807	2	0.5
EXP-16505	3.8	4.4	12	2.3	22-24	749	na	
433	4.1	3.6	10	2.3	17-19	807	na	
ES 414 (std)	3.9	4.5	13	2.8	33	723	2.5	0.75
Spring (std)	4.1	4.6	14	2.7	22-24	723	na	
SV0956QH	4.0	3.3	11	2.3	16-17	834	na	
437	4.0	4.0	14	3.0	28	834	3.25	2.5
BSC2014	4.1	3.8	15	3.5	28	859	na	
Topps	4.1	3.8	13	3.0	17-19	859	2	0.5
SV0955QH	4.3	3.9	12	2.5	28	859	na	
PLSM-14	4.4	4.0	15	3.6	24-26	859	2	1.25
Portage (std)	3.3	3.1	15	3.4	25	929	3.75	2.5
PLS226	4.5	3.9	14	3.5	27	929	na	
CS436AF	4.5	3.0	17	3.9	22	929	na	
490	4.3	3.9	12	2.8	26-28	859	na	
SV8112QH	4.5	3.3	22	5.0	20-22	929	na	
Reliance	4.3	3.5	21	4.7	24	929	na	
SV0935QF	4.8	3.8	24	4.8	23-26	965	na	
CS-424F	3.9	3.1	13	3.0	24-26	929	3	2
PLS 228	3.9	3.6	17	3.5	23-25	965	na	
SV 0969QH	4.3	3.5	14	3.0	24	994	4.5	3
Tonic (std)	4.0	3.6	14	3.3	26-28	929	3	1.5
CS-437F	4.1	3.6	14	3.2	28	965	na	
PLS 585	4.0	3.4	14	3.3	22-24	1034	na	
PLS 167	4.3	3.4	15	3.6	27	965	na	
Exp-32963	4.4	3.6	11	2.2	22-24	965	na	
SV1058QH	4.3	3.3	17	3.8	22-24	965	na	
BSC2030	3.8	3.1	16	3.5	21-22	1056	3	1.75
8540794 DA 1470	4.1	3.3	17	3.5	22-23	965	3.5	3

Table 3. Plant Characteristics Continued:

Cultivar	Plant Stand Rating	Plant Vigor Rating	Canopy Height (in.)	Plant Habit Rating (at Harvest)	Vine Length (in.)	Heat Units to First Blossom	Root Rot Rating 7/12	Root Rot Rating 7/20
Ricco	4.6	4.1	13	3.0	28-30	1056	4.75	3.5
PLS 10	4.1	3.9	11	2.7	25-26	1081	na	
SV7688QF	4.4	3.4	16	3.8	28-30	1056	na	
Bolero (std)	4.9	3.8	11	2.7	30	1034	4.5	3.5
SV1036QF	4.9	4.0	17	3.7	28-29	1081	na	
507	4.0	4.0	15	3.3	30	1081	na	
BSC5051	3.8	3.3	10	2.0	24	994	2.5	2
552	3.9	3.3	14	3.3	25	1056	4.75	4
PLS 595	4.8	3.8	15	3.3	20-21	1081	3.25	2.25
513	3.9	3.5	15	3.5	23-25	1081	4	2.5
Grundy	3.6	3.4	10	2.5	28-31	1056	4.75	3.25
529	3.8	3.3	12	2.6	22-23	1081	na	
506	3.6	3.4	15	3.5	28-30	1112	4.25	3
PLS 685	3.9	3.5	14	3.0	26-27	1081	na	
BSC3661	3.8	3.3	15	3.0	24	1112	na	
Hudson	4.1	3.1	11	2.5	20	1081	3.5	3.5
BSC4241A	4.0	3.3	10	2.3	20-22	1081	2.5	1.5
SV 0893QF	4.3	3.8	15	3.5	28-30	1081	3.25	3
BSC985	3.4	2.1	20	4.5	18-20	1177	na	
Mundial	3.3	2.3	11	2.7	20	1205	4.25	3
Prometheus	3.5	2.5	13	3.0	27-29	1205	4	3

Stand Rating –A rating of the plant stand a few weeks after planting. 1= poor, 5=excellent

Plant Vigor – A rating of plant growth a few weeks after planting. 1=poor, 5 = excellent

Canopy Ht. – Measurement in inches of the canopy height from the ground shortly before harvest.

Heat Units to First Bloom - When 80% of plants had at least one flower.

Plant Habit – Rating of how well the plants stood at harvest. 1= flat on the ground, 5 very erect

1 Root Rot Rating - Rating done by Dr. George Abawi. .

Root Rot Rating - A separate partial planting (5/28 - two replcations) was made in an infested field in Leroy NY

Two ratings were made (7/12 and 7/20)

0=dead, 5=healthy

Table 4. Maturity Sieve Distribution and Yield - (in order of maturity)

Cultivar	Days to harv	Heat Units to Harv.	Adjusted Heat U based on 100 TU	Sieve 1 %	Sieve 2 %	Sieve 3 %	Sieve 4 %	Sieve 5%	Sieve 6%	Sieve size index	Ten.	#/A	Adjusted Yield based on 100 TU	Plants per A (1000)	Plts. per foot
CS-430AF	52	1205	1174	3	4	13	35	40	5	4.2	115	8193	7764	554	6.4
	54	1271	1162	0	2	9	29	52	8	4.6	155	8374	6844	396	4.5
EXP-16505	52	1205	1193	4	6	9	18	48	15	4.5	106	7216	7048	465	5.3
	54	1271	1188	1	2	12	31	47	6	4.4	142	7162	5995	388	4.5
433	54	1271	1194	0	1	7	19	51	21	4.8	138	9394	8321	540	6.2
	55	1309	1198	1	2	6	24	49	19	4.7	155	9587	8037	382	4.4
ES 414 (std)	54	1271	1195	0	3	15	39	38	3	4.2	138	10084	9020	548	6.3
Spring (std)	51	1177	1197	2	3	8	17	48	22	4.7	90	8066	8346	498	5.7
	52	1205	1202	2	5	9	19	42	22	4.6	102	8207	8161	412	4.7
	54	1271	1218	1	1	4	19	39	35	5.0	126	8854	8116	475	5.4
SV0956QH	52	1205	1227	13	15	25	31	15	1	3.4	89	7659	7967	508	5.8
	54	1271	1220	4	8	21	36	29	3	3.9	125	9325	8616	430	4.9
437	55	1309	1270	4	4	15	31	36	10	4.3	119	7699	7158	465	5.3
BSC2014	55	1309	1283	5	12	28	38	15	1	3.5	113	9950	9586	525	6.0
	56	1348	1295	3	9	26	42	19	1	3.7	127	10012	9265	477	5.5
Topps	55	1309	1287	3	5	13	36	34	9	4.2	111	8643	8335	535	6.1
SV0955QH	54	1271	1286	5	9	26	37	18	4	3.7	92	7732	7947	529	6.1
	55	1309	1323	8	9	20	28	27	7	3.9	93	8799	8995	379	4.4
	56	1348	1331	5	7	19	28	28	13	4.1	109	9380	9137	390	4.5
	57	1387	1326	2	5	17	32	31	13	4.2	130	11623	10774	583	6.7
PLSM-14	55	1309	1318	2	9	28	45	15	1	3.6	95	8001	8131	507	5.8
	56	1348	1333	3	7	22	40	27	1	3.9	107	9213	9008	475	5.5
	57	1387	1327	1	3	17	40	36	4	4.2	130	9761	8921	448	5.1

Table 4 Continued:

Cultivar	Days to harv	Heat Units to Harv.	Adjusted Heat U based on 100 TU	Sieve 1 %	Sieve 2 %	Sieve 3 %	Sieve 4 %	Sieve 5%	Sieve 6%	Sieve size index	Ten.	#/A	Adjusted Yield based on 100 TU	Plants per A (1000)	Plts. per foot
Portage (std)	56	1348	1339	5	6	17	34	35	3	4.0	105	7725	7594	374	4.3
	57	1387	1345	4	7	19	45	24	2	3.9	121	9246	8658	412	4.7
PLS226	56	1348	1341	10	13	27	36	11	3	3.3	104	6980	6878	539	6.2
	57	1387	1344	3	8	31	47	11	1	3.6	121	8727	8129	469	5.4
CS436AF	57	1387	1350	5	9	30	42	13	1	3.6	119	9376	8854	550	6.3
490	57	1387	1352	1	3	10	34	45	7	4.4	117	10912	10426	449	5.2
SV8112QH	58	1424	1361	3	5	20	43	27	2	4.0	132	9442	8555	553	6.3
	59	1451	1362	3	4	17	33	41	2	4.1	145	9173	7922	457	5.2
Reliance	57	1387	1365	5	11	33	39	12	1	3.5	111	8647	8339	475	5.5
SV0935QF	57	1387	1370	3	10	27	40	19	1	3.7	109	7964	7722	504	5.8
	58	1424	1375	2	6	21	44	26	2	3.9	124	7873	7192	407	4.7
	59	1451	1370	2	3	21	44	27	2	4.0	140	9427	8298	524	6.0
CS-424F	58	1424	1389	3	3	9	33	47	5	4.4	117	10984	10499	507	5.8
	59	1451	1397	2	4	13	35	39	6	4.3	127	10777	10021	451	5.2
PLS 228	57	1387	1372	6	13	33	40	9	0	3.4	107	8280	8075	635	7.3
	58	1424	1397	5	10	28	43	13	1	3.6	113	8712	8339	460	5.3
SV 0969QH	58	1424	1401	6	13	35	39	7	0	3.3	111	7536	7219	485	5.6
	59	1451	1396	6	12	41	36	4	0	3.3	127	8120	7355	417	4.8
Tonic (std)	58	1424	1403	3	5	13	28	37	14	4.4	111	10066	9767	467	5.4
CS-437F	58	1424	1407	6	9	26	41	17	2	3.7	108	7325	7092	426	4.9
	59	1451	1404	4	6	21	43	24	3	3.9	123	7314	6661	433	5.0
PLS 585	61	1502	1412	6	13	48	31	2	0	3.1	145	8948	7688	449	5.2
PLS 167	58	1424	1429	13	20	40	22	3	0	2.9	97	8040	8115	589	6.8
	59	1451	1418	7	18	40	32	3	0	3.1	117	8407	7940	531	6.1

Table 4 Continued:

Cultivar	Days to harv	Heat Units to Harv.	Adjusted Heat U based on 100 TU	Sieve 1 %	Sieve 2 %	Sieve 3 %	Sieve 4 %	Sieve 5%	Sieve 6%	Sieve size index	Ten.	#/A	Adjusted Yield based on 100 TU	Plants per A (1000)	Plts. per foot
Exp-32963	59	1451	1424	4	5	17	35	32	8	4.1	114	9365	8983	509	5.8
	61	1502	1430	3	5	17	39	31	6	4.1	136	9075	8067	381	4.4
SV1058QH	59	1451	1426	2	6	30	39	20	3	3.8	113	9482	9127	599	6.9
	60	1474	1407	2	4	26	41	23	3	3.9	133	8843	7909	431	4.9
BSC2030	59	1451	1426	5	9	28	35	21	2	3.7	112	6839	6494	438	5.0
	61	1502	1437	3	5	25	48	17	3	3.8	133	8004	7089	352	4.0
8540794 DA 1470	59	1451	1413	3	8	38	39	11	1	3.5	119	9721	9189	594	6.8
	61	1502	1403	2	3	24	52	18	1	3.9	150	10821	9430	438	5.0
Ricco	60	1474	1441	4	4	17	38	32	6	4.1	116	8287	7830	485	5.6
	61	1502	1419	2	2	16	46	28	6	4.2	142	9903	8736	495	5.7
PLS 10	59	1451	1444	4	10	28	36	18	2	3.6	104	7877	7774	631	7.2
	60	1474	1453	5	8	24	42	20	2	3.7	110	7772	7482	485	5.6
	61	1502	1445	4	7	25	42	19	2	3.8	129	9641	8839	548	6.3
SV7688QF	61	1502	1463	3	9	39	35	11	2	3.5	119	9525	8984	581	6.7
	62	1534	1451	2	2	24	38	26	8	4.1	142	8803	7636	429	4.9
Bolero (std)	60	1474	1469	10	10	22	35	19	3	3.6	103	7932	7857	534	6.1
	61	1502	1464	4	6	22	42	23	2	3.9	119	9576	9044	534	6.1
SV1036QF	60	1474	1470	5	7	19	41	25	3	3.9	102	8955	8899	485	5.6
	61	1502	1461	2	4	15	44	30	4	4.1	121	10015	9437	477	5.5
507	61	1502	1481	10	13	26	29	18	4	3.5	111	6912	6613	519	6.0
	62	1534	1506	10	10	28	34	15	4	3.5	114	7293	6901	431	5.0
BSC5051	63	1565	1484	2	3	14	34	41	6	4.3	141	12774	11635	514	5.9
552	60	1474	1467	9	18	42	25	4	1	3.1	104	8178	8076	538	6.2
	61	1502	1484	6	14	45	29	5	0	3.2	109	8846	8594	490	5.6

Table 4 Continued:

Cultivar	Days to harv	Heat Units to Harv.	Adjusted Heat U based on 100 TU	Sieve 1 %	Sieve 2 %	Sieve 3 %	Sieve 4 %	Sieve 5%	Sieve 6%	Sieve size index	Ten.	#/A	Adjusted Yield based on 100 TU	Plants per A (1000)	Plts. per foot
PLS 595	60	1474	1487	6	9	29	37	16	3	3.6	93	7427	7614	532	6.1
	61	1502	1502	6	10	29	35	17	3	3.6	100	8643	8643	421	4.8
	62	1534	1496	2	3	20	50	23	3	4.0	119	9467	8935	428	4.9
513	62	1534	1499	5	6	25	44	19	2	3.7	118	7982	7488	435	5.0
	63	1565	1504	3	6	21	45	24	2	3.9	131	10320	9461	373	4.3
Grundy	61	1502	1469	5	8	25	39	19	3	3.8	116	8563	8106	527	6.0
	62	1534	1505	2	5	20	45	23	4	4.0	115	7964	7554	361	4.1
529	62	1534	1506	7	8	21	42	20	2	3.8	114	8099	7707	402	4.6
	63	1565	1512	5	6	18	42	27	3	4.0	126	7278	6541	358	4.1
506	61	1502	1492	8	12	34	36	10	1	3.4	105	7648	7508	436	5.0
	62	1534	1509	3	7	22	46	20	1	3.8	113	6839	6484	348	4.0
PLS 685	62	1534	1511	3	8	24	46	17	2	3.7	111	9743	9426	576	6.6
BSC3661	62	1534	1531	7	10	30	40	12	1	3.5	101	7605	7568	443	5.1
	63	1565	1530	2	8	24	42	22	1	3.8	117	10004	9519	359	4.1
Hudson	62	1534	1589	6	10	32	41	10	1	3.5	90	8396	9171	490	5.6
	63	1565	1536	5	7	23	41	21	3	3.8	114	9126	8724	500	5.7
	64	1598	1551	4	5	21	44	23	4	3.9	123	8073	7420	402	4.6
BSC4241A	63	1565	1543	6	6	16	31	31	10	4.1	111	6966	6658	376	4.3
	64	1598	1557	6	5	14	29	35	11	4.2	121	7623	7044	327	3.8
SV 0893QF	64	1598	1561	2	4	18	42	27	6	4.1	118	9979	9466	402	4.6
	65	1622	1569	2	4	14	38	36	5	4.2	126	11442	10704	410	4.7
BSC985	66	1645	1632	34	40	25	2	0	0	2.0	107	5158	4972	299	3.4
Mundial	66	1645	1659	5	9	28	47	11	0	3.5	93	8135	8331	433	5.0
	68	1706	1673	2	5	23	55	15	0	3.8	116	8636	8178	329	3.8
Prometheus	66	1645	1661	2	5	24	57	12	0	3.7	92	8618	8842	436	5.0
	68	1706	1679	0	4	16	58	21	0	4.0	114	10302	9919	372	4.3

Explanation for Headings in Table 4.

Days to Harvest - Number of days from planting until day of harvest.

Heat Units to Harvest - Accumulation of heat units (base 40 degree F.) from planting until harvest.

Adjusted heat units base 40 - Adjusted to 100 tenderometer reading. Two heat units were added for each unit below 100 and two units were subtracted for each unit above 100.

Average sieve percentage - Berries were hand sieved with Seedburo screens. The table on the title page describes the size of the various sieves.

Sieve Size index - Sieve size index reflects the mean sieve size of the variety at harvest.

Tenderometer measurement - A model TG4EI Integrating Texturegagage was used to determine the tenderometer units of each harvested plot. The average of the three harvested plots per cultivar was listed.

Yield - Tons per acre - The weight of the harvested berries was extrapolated to tons per acre.

Yield lbs/A - Pounds per acre was determined by extrapolating the total weight of the berries per plot to obtain lbs per acre. Harvest plot was 7 rows by 5 ft in length or 35 row feet. (43560 sq ft/A/.5 ft = 87,120 row ft per acre. 87120 row ft /A divided by 35 harvested row ft gives a factor of 2489. This factor was multiplied by total berry weight harvested per plot to obtain lbs per acre.

Adjusted Yield lbs/acre - 28 pounds was added for each tenderometer unit reading below 100. 28 pounds was subtracted for each tenderometer unit reading above 100.

Plants/foot - Total number of plants harvested was divided by the 35 row feet harvested to arrive at plants per foot.

Plant population per acre - An extrapolation of the number of harvested plants to plants per acre.

Explanation for Headings in Table 5.

This data was from 30 plants harvested the same day as our yield harvest that was closest to our objective of 100 tenderometer unit reading. Example - Variety A was harvested twice at tenderometer readings of 99 and 116. The afternoon of the first harvest (99 units), 30 plants were harvested from the back of the plot, weighed and pods were hand stripped and berries were hand shelled.

Node to first flower - The average number of nodes on the stem until the first flower (included that one or two at the soil line or below).

Average Number of nodes with pods per plant - The number of nodes that had pods were counted and recorded.

Weight of the 30 plant sample - The weight of the sample (plants and pods) was recorded in pounds.

Weight of the plants - After the pods were taken off and weighed, the calculation was made of the plant weight.

Weight of the pods - After the pods were hand picked from the plant, total weight of the pods was recorded in pounds.

Weight of the berries - The berries were hand shelled from pods, counted and weighed in pounds.

Pods per plant - The total number of pods was divided by 30 (number of plants) to determine average pods per plant.

Percentage of single pods, double pods or triple pods per node - The number of pods per node were hand counted and the number of single pods, double pods and triple pods were recorded. This was changed to a percentage.

Pod length - An average of 10 pods were lined up and measured in inches. If they were very uniform, a single number was listed, if not a range was listed.

Berries per pod - Ten uniform pods were selected and opened. The range of berries per pod in this group was listed.

Table 5. Plant and Pod Characteristics (In order of maturity)

Cultivar	Node to first flower	Ave. # Nodes with Pods/plt.	Wt. Of plants & pods (lb)	Wt. of plants (lb)	Wt. of pods (lb)	Wt of berries (lb)	% Wt. of Berries (berry wt/plts & pods wt.)	Pods per plant	% Single pods/node	% Double pods/node	% Triple pods/node	% Quad. Pods /node	Pod length (in)	Berries per pod
CS-430AF	7-10	3.5	1.23	0.68	0.55	0.27	22	5.2	35	65	0	0	2 1/2 - 3 1/2	5-8
EXP-16505	8-9	3.5	2.38	0.97	1.41	0.73	31	5.2	35	65	0	0	3 - 3 1/4	6-8
433	9-10	3.0	2.08	0.91	1.17	0.69	33	4.1	46	54	0	0	2 1/2 - 3	7-8
ES 414 (std)	9-10	3.3	1.74	0.65	1.10	0.70	40	4.6	45	55	0	0	2" - 3"	6-8
Spring (std)	8 - 10	3.1	2.52	1.28	1.24	0.45	18	3.6	74	26	0	0	3.5	7-8
SV0956QH	7-10	3.3	2.51	1.10	1.41	0.64	25	4.5	49	51	0	0	2 1/2 - 3	7-9
437	7-10	4.9	2.93	1.53	1.40	0.71	24	5.7	72	28	0	0	2 1/2 - 3	6-7
BSC2014	7-11	4.9	2.86	1.42	1.45	0.60	21	7.3	34	66	0	0	2.5-3.25	5-8
Topps	8-10	3.6	2.48	1.21	1.28	0.61	24	5.0	44	56	0	0	2 1/2 - 3	4-8
SV0955QH	8-12	4.5	3.46	1.60	1.86	0.92	27	6.2	43	57	0	0	2 1/2 - 3	7-9
PLSM-14	9-11	4.5	4.71	2.47	2.24	1.18	25	8.0	17	72	11	0	3 - 3 1/2	7-9
Portage (std)	10-12	3.7	3.78	2.01	1.78	0.91	24	7.9	13	32	48	7	2 1/2 - 3	5-8
PLS226	10-13	3.6	3.72	2.03	1.69	0.76	20	6.2	19	71	10	0	3 - 3 1/2	6-9
CS436AF	10-12	4.1	4.22	2.26	1.96	0.98	23	7.3	16	70	14	0	3 - 3 1/4	6-8
490	11-13	2.5	3.28	1.68	1.60	0.80	24	4.0	22	78	0	0	3 1/2 - 4	6-9
SV8112QH	10-12	3.0	3.18	1.82	1.37	0.62	19	5.4	26	36	33	5	3 - 3 1/4	6-9
Reliance	12-14	2.6	3.05	1.77	1.28	0.60	20	5.2	15	45	23	18	3 - 3 1/2	8-9
SV0935QF	11-13	3.8	3.70	2.30	1.40	0.57	15	6.3	32	43	19	6	3 - 3 1/2	6-9
CS-424F	9-12	4.9	5.85	3.19	2.67	1.20	20	9.7	15	41	44	0	3 - 3 1/2	7-9
PLS 228	12-14	3.7	2.96	1.36	1.60	0.68	23	6.8	14	75	9	2	3	6-9
SV 0969QH	10-14	4.2	4.35	2.57	1.78	0.70	16	9.5	7	38	49	6	2 1/2 - 3	6-8
Tonic (std)	10-13	3.8	4.33	2.32	2.01	1.00	23	6.9	21	52	25	2	2 1/2 - 3	7-9
CS-437F	11-12	4.2	4.71	2.64	2.08	0.92	20	7.9	19	44	30	7	3 - 3 1/2	7-10
PLS 585	11-13	3.5	2.66	1.53	1.13	0.70	26	6.8	13	54	33	0	3 - 3 1/2	7-10
PLS 167	10-14	4.7	3.42	1.97	1.45	0.83	24	8.8	19	45	34	2	3 - 3 1/2	7-9
Exp-32963	10-12	4.0	3.99	2.10	1.89	1.18	30	8.0	15	46	31	8	3	5-7

Table 5. Plant and Pod Characteristics Continued:

Cultivar	Node to first flower	Ave. # Nodes with Pods/plt.	Wt. Of plants & pods (lb)	Wt. of plants (lb)	Wt. of pods (lb)	Wt of berries (lb)	% Wt. of Berries (berry wt/plts & pods wt.)	Pods per plant	% Single pods/node	% Double pods/node	% Triple pods/node	% Quad. Pods /node	Pod length (in)	Berries per pod
SV1058QH	14-15	3.1	3.16	1.75	1.41	0.71	22	5.7	22	48	23	7	3 - 3 1/2	5-8
BSC2030	10-13	3.4	2.00	0.71	1.29	0.66	33	6.2	16	65	19	0	3	5-7
8540794 DA 1470	13-14	3.9	3.44	1.79	1.65	0.94	27	8.1	15	36	35	15	3 - 3 1/4	6-9
Ricco	14-16	4.2	4.01	1.89	2.12	1.13	28	7.3	17	76	7	0	3 1/2 - 4	6-9
PLS 10	12-15	2.9	2.10	0.94	1.16	0.72	34	4.3	32	68	0	0	3 1/2 - 4	7-9
SV7688QF	12-16	3.3	3.51	2.21	1.30	0.67	19	6.5	14	50	29	6	3 - 3 1/2	5-8
Bolero (std)	13-15	3.2	2.16	1.27	0.89	0.55	25	6.1	17	51	30	2	2 1/2 - 3	4-6
SV1036QF	13-16	3.1	2.63	1.50	1.13	0.73	28	5.5	21	51	27	0	3	4-7
507	14-16	4.4	4.41	2.45	1.97	0.81	18	7.4	26	55	19	0	3 - 3 1/4	6-8
BSC5051	10-12	4.1	4.07	2.37	1.70	0.94	23	7.0	25	53	20	2	3	6-9
552	12-14	3.4	2.41	1.31	1.10	0.53	22	5.9	15	83	2	0	3 - 3 1/2	6-9
PLS 595	14-15	2.5	2.77	1.48	1.29	0.70	25	4.3	17	83	0	0	3 1/2 - 4	7-9
513	13-15	4.4	3.87	2.34	1.53	0.63	16	7.3	25	60	15	0	3 - 3 1/2	7-8
Grundy	12-15	5.0	5.15	2.98	2.17	1.07	21	8.0	26	74	0	0	3 3/4 - 4	7-10
529	14-16	3.4	3.73	2.01	1.73	0.76	20	6.1	20	55	25	0	2 1/2 - 3 1/2	6-8
506	14-16	4.1	4.96	3.04	1.92	1.00	20	8.8	8	45	42	5	3 - 3 1/2	8-9
PLS 685	13-15	4.4	4.59	2.84	1.75	0.81	18	7.0	26	71	3	0	3 - 3 1/2	8-10
BSC3661	12-14	4.1	3.92	2.12	1.80	0.98	25	7.6	15	59	26	0	3 - 3 1/2	7-9
Hudson	14-16	2.8	1.87	0.90	0.97	0.46	25	3.8	49	51	0	0	2 1/2 - 3 1/2	7-9
BSC4241A	13-15	3.7	3.49	1.83	1.66	0.87	25	5.7	29	71	0	0	2 1/2 - 3 1/2	6-9
SV 0893QF	13-17	3.3	3.62	2.21	1.42	0.75	21	6.5	16	38	46	0	2 1/2 - 3	5-7
BSC985	12-15	6.2	4.63	2.82	1.81	0.88	19	12.4	15	46	32	8	2 1/2 - 3	6-8
Mundial	15-16	4.2	5.20	3.26	1.94	1.21	23	8.4	16	38	43	3	2 1/2 - 3	6-8
Prometheus	16-18	3.2	3.22	1.78	1.44	0.85	26	7.4	9	28	49	14	2 1/2 - 3	6-9

See page 11 for column explanations.

Table 6. Maturity

Tenderometer unit measurement (Days after planting - gray area indicates harvest dates)

Cultivar	Day 49 31 HU	Day 50 ³⁶ HU	Day 51 ³⁰ HU	Day 52 28 HU	Day 54 36 HU	Day 55 38 HU	Day 56 ³⁹ HU	Day 57 39 HU	Day 58 37 HU	Day 59 27 HU	Day 60 ²⁴ HU	Day 61 28 HU	Day 62 32 HU	Day 63 ³² HU
ARS 4064-09		84	88	91	119									
CS-430AF			98	115	155									
EXP-16505		89	94	106	142									
433	73	81	89	97	138	155								
ES 414 (std)	73	78	84	97	138									
Spring (std)	83	86	90	102	126									
SV0956QH		81	85	89	125									
437				79	96	119								
BSC2014					93	113	127							
Topps					97	111	140							
SV0955QH					92	93	109	130						
PLSM-14					87	95	107	130						
Portage (std)						88	105	121						
PLS226						90	104	121						
CS436AF							98	119						
490					77	85	95	117						
SV8112QH							84	106	132	145				
Reliance						81	87	111						
SV0935QF						81	92	109	124	140				
CS-424F							85	101	117	127				
PLS 228							91	107	113					
SV 0969QH							84	95	111	127				
Tonic (std)					68	75	78	101	111					
CS-437F								102	108	123				
PLS 585												145		
PLS 167								92	97	117				
Exp-32963								90	97	113		136		
SV1058QH							80	89	97	113	133			

Table 6. Maturity Continued:

Tenderometer unit measurement (Days after planting - gray area indicates harvest dates)

Day 49 31 HU	Day 54 36 HU	Day 55 38 HU	Day 56 39 HU	Day 57 39 HU	Day 58 37 HU	Day 59 27 HU	Day 60 24 HU	Day 61 28 HU	Day 62 32 HU	Day 63 32 HU	Day 64 33 HU	Day 65 25 HU	Day 66 23 HU	Day 68 35 HU
BSC2030					99	112		133						
8540794 DA 1470				97		119		150						
Ricco				82	88	97	116	142						
PLS 10					96	104	110	129						
SV7688QF					83	85	91	119	142					
Bolero (std)					85	93	103	119						
SV1036QF						95	102	121						
507								111	114	122				
BSC5051				76	82			93	93	141				
552							104	109						
PLS 595						94	93	100	119					
513							89	92	118	131				
Grundy								116	115	141				
529							86	99	114	126				
506							101	105	113	130				
PLS 685								105	111	123				
BSC3661					76	79	88	93	101	117	140			
Hudson						84	85	90		114	123			
BSC4241A									100	111	121			
SV 0893QF						76	71	78	81	94	118	126		
BSC985									83	88	86	107		
Mundial									83	84	83		93	116
Prometheus									71	74	78		92	114

Heat units per day are included in the heading. Areas not gray were samples for maturity. Samples were one gallon of pods (roughly one foot of row by 7 rows - one replication)

Table 7. Berry Characteristics

Cultivar	Pod Color	Berry Color	Berry Color Intensity	Flavor
CS-430AF	mg	3		3.5
EXP-16505	mg	3		3.5
433	lg	3.5		3.5
ES 414 (std)	mg	3		2
Spring (std)	mg	3		3
SV0956QH	lg	3		3.5
437	lg	3		3.5
BSC2014	mg	3.5		3.5-4
Topps	mg	3.5		3.5
SV0955QH	lg	3		3
PLSM-14	lg	4		3.5
Portage (std)	mg	3.5		3
PLS226	mg	3.5		3.5
CS436AF	mg	3.5	*	3
490	mg	3	*	3.5
SV8112QH	mg	3.5		3
Reliance	mg	3.5-4		3.5
SV0935QF	mg	3.5		3.5
CS-424F	mg	3.5-4		3
PLS 228	mg	3.5		3.5
SV 0969QH	mg	3.5		3.5
Tonic (std)	lg	3.5		3.5
CS-437F	mg	3.5	*	3.5
PLS 585	dg	4		3
PLS 167	dg	3.5		3.5
Exp-32963	yellow-lg	3.5		3
SV1058QH	lg	3.5		3.5
BSC2030	mg	3.5		3.5
8540794 DA 1470	mg	3.5		3
Ricco	mg	3.5-4		2.5-3
PLS 10	lg	3.5		3
SV7688QF	lg	4		3
Bolero (std)	mg	3.5		3.5

Table 7 Continued - Berry Characteristics

Cultivar	Pod Color	Berry Color	Berry Color Intensity	Flavor
SV1036QF	dg	na		na
507	mg	3.5		3.5
BSC5051	lg	3.5	*	3
552	mg	3.5		3
PLS 595	mg	3.5		3
513	lg	3.5		3.5-4
Grundy	mg	3.5		3.5-4
529	lg	3.5		3
506	mg	3.5	*	3.5
PLS 685	mg	3.5		3.5
BSC3661	mg	3.5-4		3.5
Hudson	mg	3		3
BSC4241A	mg	3.5		3
SV 0893QF	dg	3.5		3.5
BSC985	lg	3.5		4
Mundial	lg	3.5		3.5
Prometheus	mg	3.5		3.5

Pod Color - lg=light green, mg=medium green, dg=dark green

Berry Color - 1 -light green, 5 - dark green

Berry Color Intensity - * indicates stood out from others as more glossy

Flavor - 1- poor and starchy, 5 - sweet and flavorful

These characteristics were rated at the harvest closest to 110.

Additional Comments: Overall rating – 5 best and 1 worst. This rating takes into account plant type, berry type and yield – if plant and pods looked good and yield was average, it still got a higher rating. * Indicates a 4 or better. **Twiney** – tendrils on afila type very tightly intertwined.

****CS-430AF** – early season, a few mottled pods, tasty berries, very high percentage of double pods, plant habit 4.5, sized up fast, overall rating 4.5.

EXP-16505 – early season, good plant vigor, very high percentage of double pods, pods quite hard, plant habit 3, overall rating 3.5.

433 – early season, quite recumbent for an afila, lots of pods, plant habit 2.5, overall rating 3.5.

ES414 – early season, good plant vigor, pods are hard, plant habit 3, very good yield, overall rating 3.5.

Spring – early season standard, good plant vigor, plant habit 2.5, good yield, overall rating 3.5.

***SV0956QH** – early season, looks like it will yield, uniform plants, smaller sieve size index, plant habit 3, overall rating 4.0.

437 – good plant vigor, a three – four sieve, mostly single pods, plant habit 3, overall rating 3.5.

***BSC2014** – foliage did not brown as fast as other early cultivars, sized up fast, very high percentage of double pods, very good yield, plant habit 3.5, overall rating 4.

***Topps** – a few off type plants, plant habit 2.5, sized up fast, overall rating 4.0.

SV0955QH – a few light green berries in the sample, plant habit 2.5, very good yield, overall rating 3.5.

PLSM14 – slightly afila, good plant vigor, plant habit 3, very high percentage of double pods, very good yield, smaller sieve size index, overall rating 3.5.

Portage – lower plant population than most, sized up fast, plant habit 3.5, overall rating 3.0.

***PLS226** – very high percentage of double pods, plant habit 3, smaller sieve size index, sized up fast, overall rating 4.0.

***CS436AF** – berries a bit more glossy than others, very high percentage of double pods, plant habit 3.5, sized up fast, overall rating 4.0.

***490** – long, slender pods, berries a bit more glossy than others, very high percentage of double pods, plant habit 2.5, very good yield, overall rating 4.0

****SV8112QH** – plant habit 4.5, overall rating 5.0.

****Reliance** – plant habit 4.5, smaller sieve size index, very nice plant and pod combination, overall rating 4.5.

****SV0935QF** – lots of pods located high on the plant, very twiney, plant habit 4.5, overall rating 5.0.

CS424F – good sized berries – mostly four and five sieve, plant habit 2.5, very good yield, overall rating 3.5.

Additional comments continued:

***PLS228** – very high percentage of double pods, plant habit 3.5, smaller sieve size index, overall rating 4.0.

***SV0969QH** – a bit smaller sieve, good yield, plant habit 3, overall rating 4.0.

***Tonic** – commercial standard, plant habit 3.5, very good yield, overall rating 4.0.

***CS-437F** – some plants slimy at the base of the plant, nice, long pods, berries a bit more glossy than others, plant habit 2.5, overall rating 4.0.

PLS585 – we missed sampling this one, plant habit 3, very small sieve type, overall rating 4.0.

***PLS167** – good plant stand, petite variety, plant habit 3.5, overall rating 4.0.

Exp-32963 – slight root rot, plant habit 2, overall rating 3.5.

****DLSC7091058** – some pods entwined in tendrils (deformed), a few pods had sunscald, plant habit 5, very good yield, overall rating 4.5.

BSC2030 – afile that is recumbent, gaps in the stand, very high percentage of double pods, plant habit 3.5, overall rating 3.5.

****EX08540794** – processor asked us to harvest this at a higher tenderometer reading, plant habit 4.5, very good yield, overall rating 5.

***Ricco** – good plant vigor, an afile that is recumbent, long pods, very high percentage of double pods, should yield, plant habit 3, overall rating 4.0.

***PLS10** – an afile that is recumbent, long pods, very high percentage of double pods, plant habit 3.5, overall rating 4.0.

****SV7688QF** – good yield, plant habit 5, a nice plant and pod combination, overall rating 4.5.

Bolero – some plants had no pods, base of the plants were slimy, plant habit 2.5, very good yield, overall rating 3.5.

***SV1036QF** – good plant vigor, plant habit 4, very good yield, overall rating 4.0.

***507** – good plant vigor, lots of pods, plant habit 2.5, smaller sieve size index, overall rating 4.

BSC5051 – huge yield but very indeterminate, late maturing, berries a bit more glossy than others, not impressive, plant habit 2.5, overall rating 3.0.

***552** – very high percentage of double pods, plant habit 4, smaller sieve size index, overall rating 4.0.

***PLS595** – took a little longer to come out of the ground, long pods that should help yield, very high percentage of double pods, plant habit 3.5, overall rating 4.5.

***513** – very high percentage of double pods, nice healthy looking plants, plant habit 3.5, overall rating 4.

Grundy – very high percentage of double pods, a few blonde berries, sized up fast, plant habit 3, overall rating 4.

Additional comments continued:

529 – lower plant population than most, some plants dying, plant habit 3.5, overall rating 3.5

***506** – berries a bit more glossy than others, plant habit 4, overall rating 4.

***PLS685** – very high percentage of double pods, plant habit 3.5, very good yield, overall rating 4.

BSC3661 – plant habit 3.5, very good yield, overall rating 3.5.

***Hudson** – slightly afila, plant habit 3, overall rating 4.

BSC4241A – lower plant population than most, very high percentage of double pods, plant habit 2.5, overall rating 3.5.

SV0893QF – quite indeterminate, lower plant population than most, not impressive, plant habit 3, very good yield, overall rating 3.

BSC985 – very late season, a true petite variety, highest pods per plant, hard to shell with mechanical sheller, several plants did not have usable pods, lower plant population than most, indeterminate, plant habit 4.5, overall rating 3.5.

***Mundial** – very late season, recumbent plants with lots of short pods, plant habit 2, overall rating 4.

Prometheus – very late season, lots of pods (most triples), some blonde or cream colored berries, several plants had no pods, still should yield, plant habit 2.5, very good yield, overall rating 4.

Descriptions Provided by the Seed Source

CS-430AF – *Crites, afila leaf, 1260 heat units, 3.5 average sieve size.*

EXP-16505 – *Crites, normal leaf, 1250 heat units.*

433 – *Gallatin Valley, afila leaf type, first early maturity (1170 heat units), 7-8 nodes to flower.*

ES414 – *Seminis, normal leaf type, medium sieve size (3.55), high yield potential and an attractive finished product, early maturity (1195 heat units), 10 nodes to first flower, 1-2 pods per node, 7-8 berries per pod, 16 inch plant height, HR for Fop1 and has excellent stress tolerance that helps promote uniform maturity at harvest. (Breeder comments – high yield potential and an attractive finished product.)*

Spring – *Seminis, normal leaf, 1155 heat units, 3.9 average sieve size, 9-10 nodes to flower, 1-2 pods per plant, 6-7 berries per pod, 16 inch plant height, resistance to Fusarium wilt race 1.*

SV0956QH – *Seminis, normal leaf, 1205 heat units, Sweet Savor gene, HR for Fop1 and BYMV; IR for Pv.*

437 – *Gallatin Valley, normal leaf, second early maturity (1230 heat units).*

BSC2014 – *Brotherton, normal leaf, 1160 heat units, 9 nodes to flower.*

Descriptions provided by Seed Source continued:

Topps – Pure Line Seeds, normal leaf type, 2nd early maturity, 60 days to maturity or approximately 1260 heat units; 23-24 inches high, dark green, determinate growth, pods are double, 3 inches long and blunt; wrinkled seed with first bloom on the 10th or 11th node, 3.5 average sieve size, resistance to Fusarium wilt race 1 and tolerance to Fusarium root rot.

SV0955QH – Seminis, normal leaf, 1290 heat units, Sweet Savor gene, HR for Fop1 and BYMV; IR for Pv.

PLSM14 – Pure Line, normal leaf type, 1350 heat units, 3.7 average sieve size, 9 nodes to first flower, high tolerance to Fusarium wilt race 1.

Portage – Crites, midseason maturity, 60 days to maturity or approximately 1325 heat units, afila leaf type, 18 inch plant height, 10 nodes to first bloom, 2-3 pods per node, 7-8 peas per pod, 3.78 sieve size index, resistant to fusarium wilt race 1.

PLS226 – Pure Line, afila leaf type, 1340 heat units. 3.5 average sieve size, 10 nodes to first flower, high tolerance to Fusarium wilt race 1, race 2 and powdery mildew.

CS436AF – Crites, afila leaf type, 1390 heat units,

490 – Gallatin Valley, normal leaf type, second early maturity (1280 heat units).

SV8112QH – Seminis, Sweet Savor gene type, Determinate afila leaf type, Sweet Savor gene type, 1430 heat units, 3.1 average sieve size, HR for Ep, Fop1, Fop2, PEMV and BYMV; IR for Pv; S to Aps.

Reliance - Seminis, determinate afila type, 1420 heat units or midseason maturity, 14 nodes to first flower, 2-3 pods per node, 8 berries per pod, 3.2 average sieve size, 18 inch plant height, HR for Ep, Fop1, Fop2, PEMV and BYMV; IR for Pv. The 2nd reproductive node is a terminal node with 2 racemes. This variety does not carry the Sweet Savor gene but it appears to relatively slow in the conversion of sugar to starch. It gives a very homogenous fresh product in color and quality on an easy to harvest plant type.

SV0935QF – Seminis, Sweet Savor gene, Determinate afila leaf type, 1340 heat units to harvest, 3.1 average sieve size, 12 nodes to first flower, 2-3 pods per node, 7-8 berries per pod, 16 inch plant height. HR for Ep, Fop 1&2, PEMV and BYMV; IR for Pv. Breeder Comments - This variety combines higher sweetness, slower conversion to sugar to starch, uniform color and sieve size on an easy to harvest plant type.

CS424F – Crites, normal leaf, 1405 heat units, 4.0 average sieve size.

PLS228 – Pure Line Seeds, afila leaf type, 1380 heat units, 3.5 average sieve size, 10 nodes to first flower, high tolerance to Fusarium wilt race 1, race 2 and powdery mildew.

SV0969QH – Seminis, Sweet Savor gene type, normal leaf, 1360 heat units, 3.1 average sieve, HR for Ep, Fop1, Fop2 and BYMV; IR for Pv.

Tonic – Brotherton, normal leaf type, 63 days to maturity (1300 heat units), 10 nodes to first flower, 7-9 berries per pod, 3.6 average sieve size, 2-3 pods per node.

CS-437F – Crites, normal leaf type, 1460 heat units.

PLS585 – Pure Line Seeds, afila leaf type, 1580 heat units, 3.1 average sieve size, 10 nodes to first flower, high tolerance to Fusarium wilt race 1; tolerance to Fusarium wilt race 2.

Descriptions provided by Seed Source continued:

PLS167 – Pure Line, midseason (1440 heat units), afila leaf type, 3.1 average sieve size, high tolerance to Fusarium wilt race 1 and Powdery mildew; tolerance to Fusarium wilt race 2.

Exp-32963 – Crites, normal leaf type, 1490 heat units,

DLSC7091058 – Seminis, Determinate afila leaf type, Sweet Savor gene, 1450 heat units, 3.1 average sieve size, HR for Ep, Fop2, PEMV and BYMV; IR for Pv; S to Fop1.

BSC2030 – Brotherton, normal leaf, (1532 heat units), 10 nodes to flower.

EX08540794 – Seminis, 1470 heat units, determinate afila type, 3.2 average sieve size, 2-3 pods per node, 7-9 berries per pod, 18 inch plant height, HR for Fus R1 (Fop1) and HR for BY (BYMV). Sweet savor gene which slows conversion of sugar to starch, true determinate plant type which allows for improved sieve distribution and less waste at harvest from immature fruit.

Ricco – Gallatin Valley, mainseason variety (68 days to maturity or 1530 heat units), afila leaf type, 16 nodes to first flower, 26 inch plant height, 2 pods per node, 3.7 average sieve size, 8-9 berries per pod, pointed pod shape, HR for Fusarium wilt race 1 and IR for race 2, HR for Bean Leaf Roll Virus and Powdery Mildew race 1, dark green foliage, excellent disease package including root rot tolerance, superior yield, medium size berry, uniform berry color, widely adapted.

PLS10 – Pure Line Seeds, afila leaf type, 1540 heat units, 3.6 average sieve size, 11 nodes to first flower, high tolerance to pea enation mosaic virus.

SV7688QF – Seminis, Sweet Savor gene type, Determinate afila leaf type, Sweet Savor gene type, 1480 heat units, 3.2 average sieve size, HR for Ep, Fop1, Fop2, PEMV and BYMV; S for Aps.

Bolero – Pure Line, normal leaf type, 1510 heat units, 24 inch plant height, double and triple pods per node, blunt pods 3 inches long, 8-9 berries per pod, average sieve size 4.0, 14 nodes to first bloom, resistant to Fusarium wilt race one, susceptible to powdery mildew.

SV1036QF – Seminis, afila leaf type, 1525 heat units, 3.8 average sieve size, HR to Ep, Fop2 and PEMV.

507 – Gallatin Valley, afila leaf type, 1580 heat units, Aph tolerance.

BSC5051 – Brotherton, normal leaf, 1300 heat units, 10 nodes to first flower.

552 – Gallatin Valley, afila leaf type, 1560 heat units, Aph/Fop tolerance.

PLS595 – Pure Line – afila leaf type, 1540 heat units, 13 nodes to first flower, high tolerance to Fusarium wilt race 1 and powdery mildew; tolerance to Downy mildew.

513 – Gallatin Valley, normal leaf type, 1550 heat units, Bolero type with RR.

Grundy – Gallatin Valley, normal leaf type, midseason maturity (1595 heat units), 16 nodes to first flower, 2 pods per node, 3.8 average sieve size, 8-9 berries per pod, 28 inch plant height, pointed pod shape, high resistance to fusarium wilt races 1 and 2, high resistance to powdery mildew, IR for Pea Enation Mosaic Virus.

529 – Gallatin Valley, afila leaf type, 1560 heat units, Aph tolerance.

506 – Gallatin Valley, afila leaf type, 1560 heat units, Aph tolerance.

Descriptions provided by Seed Source continued:

PLS685 – Pure Line Seeds, afila leaf type, 1600 heat units, high tolerance to Fusarium wilt race 1 and Powdery mildew.

BSC3661 – Brotherton, normal leaf type, 1530 heat units, 14-15 nodes to first flower.

Hudson – (CMG 378F) – Crites, 1540 heat units, normal leaf type, 15 nodes to first flower, 25 inch plant height, 2 pods per node, 9-10 berries per pod, 3.82 sieve size index, resistance to fusarium wilt races one and two, resistant to PM, resistant to En.

BSC4241A – Brotherton, normal leaf type, 1570 heat units, 15 nodes to first flower.

SV0893QF – Seminis, late season, 1525 heat units, normal leaf type, 3.50 average sieve size, 14 nodes to first flower, 2-3 pods per node, 8-9 berries per pod, 24 inch plant height, wr gene, HR for BYMV/Ep/Fop:1, IR for Pv; S to Fop2 and Aps.

BSC985 – Brotherton, afila leaf type, 1570 heat units, 15 nodes to first flower.

Mundial – Seminis, a new, late maturing, normal leaf type with a nice short plant that appears to stand better compared to many other normal foliage varieties, maturity is approximately 1600 heat units with a 3.25 sieve size, resistance to powdery mildew and races 1 and 2 of the fusarium wilt fungus, intermediate resistance against common races of downy mildew, 15-16 nodes to first flower, 2-3 pods per node, 7-9 berries per pod, yield potential has been excellent.

Prometheus – Seminis, normal leaf type, late season (1650 heat units), 3.4 average sieve size, 16 nodes to first flower, 2-3 pods per node, 8-9 berries per pod, 24 inch plant height, HR for Ep, Fop1, PEMV and BYMV; IR for Pv. Breeder comments – High yielding variety in a very unique maturity with a very good disease package.

A cutting was held on 11/6 where frozen peas were warmed and evaluated by a number of processing and seed company representatives. I did not evaluate this. Special thanks to Wilma Kean, Mary Lou Hessney and Paula Fox for their assistance in making this event successful.

Table 8. Weather Summary

Date	days	Max. Temp.	Min. Temp.	Mean Temp.	Precip.	Acc Precip.	Degree days base 40	acc dd units base 40
5/7/14	1	58	36	47	0	0	7	7
5/8/14	2	63	39	51	0	0	11	18
5/9/14	3	74	49	61.5	0.1	0.1	21.5	39.5
5/10/14	4	85	58	71.5	0.25	0.35	31.5	71
5/11/14	5	74	49	61.5	0	0.35	21.5	92.5
5/12/14	6	74	51	62.5	0	0.35	22.5	115
5/13/14	7	80	52	66	0	0.35	26	141
5/14/14	8	76	38	57	1.62	1.97	17	158
5/15/14	9	82	59	70.5	0	1.97	30.5	188.5
5/16/14	10	77	49	63	1.32	3.29	23	211.5
5/17/14	11	55	40	47.5	0.46	3.75	7.5	219
5/18/14	12	55	42	48.5	0.04	3.79	8.5	227.5
5/19/14	13	60	41	50.5	0	3.79	10.5	238
5/20/14	14	67	44	55.5	0.02	3.81	15.5	253.5
5/21/14	15	72	52	62	0	3.81	22	275.5
5/22/14	16	67	54	60.5	0.14	3.95	20.5	296
5/23/14	17	74	53	63.5	0	3.95	23.5	319.5
5/24/14	18	56	51	53.5	0.1	4.05	13.5	333
5/25/14	19	72	54	63	0	4.05	23	356
5/26/14	20	77	63	70	0	4.05	30	386
5/27/14	21	82	62	72	0	4.05	32	418
5/28/14	22	83	53	68	0	4.05	28	446
5/29/14	23	57	51	54	0	4.05	14	460
5/30/14	24	66	47	56.5	0	4.05	16.5	476.5
5/31/14	25	74	50	62	0	4.05	22	498.5
6/1/14	26	70	44	57	0	4.05	17	515.5
6/2/14	27	79	56	67.5	0	4.05	27.5	543
6/3/14	28	87	62	74.5	0.33	4.38	34.5	577.5
6/4/14	29	82	52	67	0.05	4.43	27	604.5
6/5/14	30	72	52	62	0	4.43	22	626.5
6/6/14	31	64	53	58.5	0	4.43	18.5	645
6/7/14	32	71	52	61.5	0	4.43	21.5	666.5
6/8/14	33	78	52	65	0	4.43	25	691.5
6/9/14	34	82	60	71	0.57	5	31	722.5
6/10/14	35	72	60	66	0	5	26	748.5
6/11/14	36	75	62	68.5	0.02	5.02	28.5	777

Table 8. Weather Summary

Date	days	Max. Temp.	Min. Temp.	Mean Temp.	Precip.	Acc Precip.	Degree days base 40	acc dd units base 40
6/12/14	37	77	63	70	0.13	5.15	30	807
6/13/14	38	69	64	66.5	0.23	5.38	26.5	833.5
6/14/14	39	81	50	65.5	0.1	5.48	25.5	859
6/15/14	40	64	52	58	0	5.48	18	877
6/16/14	41	71	52	61.5	0	5.48	21.5	898.5
6/17/14	42	84	56	70	0	5.48	30	928.5
6/18/14	43	88	65	76.5	0.71	6.19	36.5	965
6/19/14	44	75	62	68.5	0.05	6.24	28.5	993.5
6/20/14	45	72	51	61.5	0	6.24	21.5	1015
6/21/14	46	70	47	58.5	0	6.24	18.5	1033.5
6/22/14	47	73	52	62.5	0	6.24	22.5	1056
6/23/14	48	77	53	65	0	6.24	25	1081
6/24/14	49	83	59	71	0	6.24	31	1112
6/25/14	50	85	66	75.5	1.12	7.36	35.5	1147.5
6/26/14	51	75	64	69.5	0.55	7.91	29.5	1177
6/27/14	52	77	58	67.5	0	7.91	27.5	1204.5
6/28/14	53	82	60	71	0	7.91	31	1235.5
6/29/14	54	85	66	75.5	0	7.91	35.5	1271
6/30/14	55	86	69	77.5	0	7.91	37.5	1308.5
7/1/14	56	88	70	79	0	7.91	39	1347.5
7/2/14	57	89	69	79	0.15	8.06	39	1386.5
7/3/14	58	86	68	77	0	8.06	37	1423.5
7/4/14	59	76	58	67	0.1	8.16	27	1450.5
7/5/14	60	71	56	63.5	0	8.16	23.5	1474
7/6/14	61	78	57	67.5	0	8.16	27.5	1501.5
7/7/14	62	82	62	72	0	8.16	32	1533.5
7/8/14	63	78	65	71.5	0.1	8.26	31.5	1565
7/9/14	64	86	59	72.5	0.1	8.36	32.5	1597.5
7/10/14	65	76	53	64.5	0.32	8.68	24.5	1622
7/11/14	66	74	52	63	0	8.68	23	1645
7/12/14	67	78	54	66	0	8.68	26	1671
7/13/14	68	84	66	75	0	8.68	35	1706