

# NEW YORK STATE 2023 PROCESSING PEA CULTIVAR TRIAL REPORT

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## Table of Contents

<i>Page 1</i>	<i>Title Page and Table of Contents</i>
<i>Page 2</i>	<i>Table 1 – Sieve Size Diameters</i>
<i>Page 3</i>	<i>Table 2 - Cultivar List and Maturity from Seed Source</i>
<i>Page 4</i>	<i>Table 3 - Plant and Maturity Characteristics</i>
<i>Page 5</i>	<i>Explanation for Headings in Table 3</i>
<i>Pages 6-8</i>	<i>Table 4 - Maturity, Sieve Distribution and Yield</i>
<i>Page 9</i>	<i>Explanations for Headings in Table 4</i>
<i>Pages 10&amp;11</i>	<i>Table 5 - Plant and Pod Characteristics</i>
<i>Pages 12</i>	<i>Explanations for Headings in Table 5</i>
<i>Pages 13&amp;15</i>	<i>Table 6 - Weather Summary and Adjusted Yield Factors</i>
<i>Page 16</i>	<i>Explanations for Headings in Table 6</i>
<i>Pages 17-19</i>	<i>Cultivar Descriptions from the Seed Source</i>
<i>Page 20</i>	<i>2023 Annual Cutting</i>

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## Procedure & Materials:

**Location:** Cornell AgriTech 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:** 5/11. Picking started on 6/29 and we finished on 7/21. **Herbicide -** Dual directly after planting. **Plot Size:** 7 rows by 30 ft. **Row Width:** 6 inches, **Row length:** 30 ft. **In-row Spacing:** All cultivars were adjusted (seed planted) to 100% germination. Our processor has asked us to target for 600,000 plants per acre for early, 570,000 for second early and 550,000 plants per acre for the rest. **Insecticide -** none. **Experimental Design -** Randomized split block design, 4 replications (3 replications were harvested, and another was left for demonstration). **Model TG4EI Integrating Texturegag** - 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 and seed companies, in an attempt to find new, higher quality, and disease resistant varieties that are adapted to our climate and soil conditions. Evaluation of processed products was held on 11/07/22 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 (1/4)	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:

Early April was relatively dry but the second half was wet which pushed back our planting date. The trial was planted on May 11th, soil conditions were slightly clumpy due to moisture during tillage but overall conditions were adequate. The peas were planted into moist soils but they soon dried down because of lack of precipitation. From planting until the end of May, 0.9 inches of precipitation occurred. Emergence was slow due to lack of moisture but overall emergence was good to excellent. June was more seasonable with regards to precipitation receiving about 4.2 inches of rain but was relatively cool. July was more seasonable with regards to precipitation and temperature. See the weather insert at the end of the summary for a breakdown of temperatures and precipitation over the growing season.

**Table 2: Cultivar List and Maturity from Seed Source**

Cultivar	GDD (40F)	Seed Source	Leaf Type	Seed Treatment	Seed Count/lb	Germ. %	Sieve Index	Nodes to blossom
Eldorado	1110	Pure Line	N	LSVT Vayantis	2416	98	3.8	8
Premium	1150	Brotherton	N	-	2200	-	4.3	9
FP2269	1190	Gallatin Valley	Af	Apron, Maxim, Cruiser	2119	92	3.8	9-10
CS-504AF	1200	Crites	Af	Apron, Maxim, Cruiser	2495	95	3.7	10
SV3628QH	1205	Seminis	N	-	2760	-	3.2	-
GVS 1751	1220	Gallatin Valley	Af	Apron, Maxim, Cruiser	2362	92	3.8	10
SV6485QH	1250	Seminis	Det. N	-	2100	-	3.3	-
DGL-0027	1270	Pure Line	Af	LSVT Vayantis	2630	98	3.6	11
EXP455	1280	Brotherton	Af	-	2268	-	3.2	9-10
EXP776	-	Brotherton	N	-	-	-	-	-
PLS-228	1330	Pure Line	Af	LSVT Vayantis	2801	97	3.3	10
Saltingo	1330	Pure Line	Af	LSVT Vayantis	2213	97	3.5	11
Portage	1340	Crites	Af	Apron, Maxim, Cruiser	2200	-	3.75	10
EXP773	1360	Brotherton	N	-	2548	-	3.4	13
Nitro	1370	Seminis	N	-	4800	-	2	13-14
CS-560DAF	1370	Crites	Af	Apron, Maxim, Cruiser	2565	92	3.5	11
GVS 518	1380	Gallatin Valley	Af	Apron, Maxim, Cruiser	2954	94	3.8	12-13
BSC489	1383	Brotherton	Af	-	4775	-	1.9	12-13
PLS-566	1400	Pure Line	Af	LSVT Vayantis	2630	92	3.8	12
PLS-586	1420	Pure Line	Af	LSVT Vayantis	2723	95	4	12
Pea Wee	1450	Pure Line	N	LSVT Vayantis	5250	97	2.5	14
GVS828	1450	Gallatin Valley	Af	Apron, Maxim, Cruiser	2970	96	3.7	14-15
Boogie	1470	Brotherton	Af	-	2200	-	3.8	14-15
CS-492AF	1470	Crites	Af	Apron, Maxim, Cruiser	2340	97	3.4	12
Da 1470	1470	Seminis	Det. Af	-	2926	-	3.2	12-14
SV1231QF	1480	Seminis	Af	-	2576	-	3.2	15
PLS-602	1490	Pure Line	Af	LSVT Vayantis	3227	95	3.1	14
Rihanna	1500	Pure Line	N	LSVT Vayantis	5908	100	1.8	17
EXP069	-	Brotherton	Af	-	-	-	-	-
FP2278	1500	Gallatin Valley	Af	Apron, Maxim, Cruiser	2562	96	3.6	14-15
CS-468AF	1520	Crites	Af	Apron, Maxim, Cruiser	2293	98	4	14
SV0823QG	1525	Seminis	Af	-	2422	-	3.3	17
Ricco	1530	Gallatin Valley	Af	Apron, Maxim, Cruiser	2280	98	3.8	15-16
Jerome	1530	Brotherton	Af	-	2075	-	-	-
BSC482	1545	Brotherton	Af	-	4525	-	-	-
BSC737	1560	Brotherton	Af	-	2592	-	3.6	15-17
SV6844QG	1600	Seminis	Af	-	2508	-	3.6	17
PLS196	1600	Pure Line	Af	LSVT Vayantis	2419	75	3.9	15
CS-515AF	1620	Crites	Af	Apron, Maxim, Cruiser	2768	99	3.8	15
CS-517AF	1650	Crites	Af	Apron, Maxim, Cruiser	2300	92	3.5	16
EXP649	1650	Brotherton	Af	-	2170	-	3.6	14-15
Festivert	-	Syngenta	-	-	-	-	-	-
Ballade	1700	Pure Line	Af	LSVT Vayantis	3697	85	3.2	17
SV5685QG	1750	Seminis	N	-	2490	-	3.4	17

**Table 3: Plant & Maturity Characteristics**

Cultivar	Days to Full Flower	GDD to Full Flower (40°F)	Height at Harvest (in)	Stand Rating (1-5)
Eldorado	34	720	10-13	4.0
Premium	36	765	10-13	4.0
FP2269	35	745	11-14	4.0
CS-504AF	37	790	11-14	4.0
SV3628QH	38	815	10-12	4.0
GVS 1751	39	842	10-13	4.5
SV6485QH	41	904	11-14	4.5
DGL-0027	42	931	12-14	4.5
EXP455	42	931	13-17	4.0
EXP776	44	994	13-16	4.0
PLS-228	44	994	15-18	4.0
Saltingo	44	994	11-15	4.5
Portage	43	962	10-13	4.5
EXP773	43	962	11-13	3.5
Nitro	44	994	11-13	4.0
CS-560DAF	42	931	11-14	4.0
GVS 518	44	994	14-17	3.5
BSC489	45	1028	15-20	4.0
PLS-566	45	1028	13-16	4.0
PLS-586	45	1028	13-16	4.0
Pea Wee	46	1060	13-16	4.0
GVS828	46	1060	14-18	4.5
Boogie	46	1060	13-16	4.5
CS-492AF	45	1028	13-17	4.5
Da 1470	45	1028	12-15	4.0
SV1231QF	47	1092	14-17	4.0
PLS-602	47	1092	12-14	4.0
Rihanna	50	1178	14-17	4.0
EXP069	47	1092	14-16	4.0
FP2278	47	1092	15-20	4.0
CS-468AF	47	1092	15-17	3.5
SV0823QG	49	1145	18-22	4.0
Ricco	47	1092	13-16	4.5
Jerome (712)	47	1092	15-19	4.0
BSC482	49	1145	18-21	4.0
BSC737	48	1116	17-21	4.5
SV6844QG	50	1178	13-16	4.5
PLS196	49	1145	13-16	4.5
CS-515AF	48	1116	13-17	4.0
CS-517AF	52	1246	13-19	4.0
EXP649	49	1145	12-15	4.5
Festivert	51	1213	17-20	3.5
Ballade	54	1313	14-19	4.5
SV5685QG	59	1485	13-16	4.0

**Explanations for Headings in Table 3:**

**GDD to Full Flower** – Monitored peas to identify full flower date and used base 40°F for growing degree days.

**Plant Height at Harvest** – Height measurements are taken on the day of harvest from all 3 plot replications and a range is recorded.

**Plant Stand Rating** – About three weeks after planting, a visual evaluation of the plant stand is made, using a scale of 1 to 5. 1 – Few plants, extremely patchy, 5 – full stand, no empty patches.

**Root Rot Trial\*** - Due to logistics and weather we were not able to evaluate our root rot planting for 2023. We will continue the ratings in 2024. A field at the research farm that was planted with peas too many times has turned into a root rot nursery. We plant peas annually to encourage inoculum and plant all the varieties in the variety trial into that field and rate for root rot damage using a scale of 1 to 5. 1 – completely dead, 5 – no visual symptoms.

**Table 4: Maturity, Sieve Distribution and Yield**

Cultivar	Days to harv.	GDD (40F)	Adj. GDD 110 TR	% Sieve >1	% Sieve 1	% Sieve 2	% Sieve 3	% Sieve 4	% Sieve 5	% Sieve 6	% Sieve 6>	Sieve size index	Ten. (TU)	Berry yield (lbs/A)	Berry yield (tons/A)	Adj. yield 110 TU (tons/A)	Plants per Acre (1000)
Eldarado	49	1145	1190	4.9	4.8	9.8	21.5	34.9	19.3	4.7	0.0	3.7	87	4527.1	2.3	2.6	522720
Eldarado	51	1213	1209	0.0	0.7	1.8	7.5	28.7	56.6	4.7	0.0	4.5	113	4350.8	2.2	2.2	526868
Premium	52	1246	1282	0.3	0.8	2.2	8.5	17.5	37.0	30.0	3.7	4.9	92	6611.8	3.3	4.5	559020
Premium	54	1313	1289	0.2	0.5	0.8	3.4	8.2	26.6	49.2	11.2	5.3	123	6710.0	3.4	3.1	545537
FP2269	50	1178	1231	0.2	1.5	5.5	21.7	36.4	31.2	3.5	0.0	4.0	84	4786.4	2.4	4.4	554871
FP2269	52	1246	1254	0.0	0.3	1.7	5.5	22.8	48.6	20.4	0.7	4.8	106	6959.2	3.5	3.6	562131
CS-504AF	50	1178	1230	0.0	2.3	7.6	22.4	38.0	26.7	3.0	0.0	3.9	84	3371.8	1.7	3.3	551760
CS-504AF	52	1246	1248	0.2	0.7	1.4	6.3	19.1	50.2	21.5	0.7	4.8	109	4433.8	2.2	2.3	602580
SV3628QH	52	1246	1285	0.7	2.4	7.7	24.2	35.6	28.5	1.0	0.0	3.8	91	6326.6	3.2	4.5	591171
SV3628QH	54	1313	1281	0.0	0.7	2.0	9.5	33.5	48.7	5.7	0.0	4.4	126	7062.9	3.5	3.2	561094
GVS 1751	52	1246	1290	1.5	2.8	7.9	23.6	40.2	21.6	2.3	0.0	3.8	88	5725.0	2.9	4.8	511311
GVS 1751	54	1313	1281	0.2	1.2	2.4	10.5	28.9	46.1	10.7	0.2	4.5	127	7171.8	3.6	3.3	544500
SV6485QH	53	1278	1329	5.1	12.8	20.7	36.6	20.8	4.1	0.0	0.0	2.8	84	3407.0	1.7	3.2	675180
SV6485QH	55	1351	1367	4.2	8.1	17.5	36.7	26.2	6.2	1.2	0.0	3.1	102	4238.8	2.1	2.5	708369
DGL-0027	53	1278	1355	2.2	6.3	18.6	38.9	28.2	5.8	0.0	0.0	3.1	72	3868.5	1.9	n/a	690737
DGL-0027	56	1390	1390	0.8	1.8	6.4	21.3	52.2	16.7	0.8	0.0	3.8	110	6005.1	3.0	3.2	571466
EXP455	53	1278	1294	0.5	0.8	3.0	16.3	41.5	36.5	1.4	0.0	4.1	102	4449.3	2.2	2.4	568354
EXP455	54	1313	1289	0.0	0.5	2.4	12.5	36.5	43.3	4.9	0.0	4.3	122	4112.3	2.1	1.9	627471
EXP776	57	1424	1474	2.3	3.7	12.8	34.9	35.7	10.4	0.3	0.0	3.4	85	6456.0	3.2	6.4	583911
EXP776	59	1485	1475	1.7	1.7	3.8	19.7	49.1	22.6	1.5	0.0	3.9	115	7960.0	4.0	4.1	597394
PLS-228	56	1390	1413	2.2	5.9	16.5	49.1	23.1	3.3	0.0	0.0	3.0	98	5289.4	2.6	3.1	634731
PLS-228	57	1424	1412	1.1	2.3	9.5	42.0	41.2	3.4	0.3	0.0	3.4	116	6139.9	3.1	3.0	598431
Salingo	57	1424	1452	0.9	2.7	8.2	29.3	46.6	11.8	0.5	0.0	3.6	96	8400.9	4.2	5.2	744669
Salingo	58	1453	1451	1.2	1.8	6.7	30.8	51.2	7.9	0.5	0.0	3.6	111	8883.1	4.4	4.4	648214
Portage	56	1390	1407	1.5	3.3	10.7	29.2	39.6	14.8	0.8	0.0	3.6	101	5994.7	3.0	3.4	584949
Portage	57	1424	1430	1.8	2.0	7.0	28.0	40.6	19.7	0.8	0.0	3.7	107	7203.0	3.6	3.8	577689

**Table 4 continued: Maturity, Sieve Distribution and Yield**

Cultivar	Days to harv.	GDD (40F)	Adj. GDD 110 TR	% Sieve >1	% Sieve 1	% Sieve 2	% Sieve 3	% Sieve 4	% Sieve 5	% Sieve 6	% Sieve 6>	Sieve size index	Ten. (TU)	Berry yield (lbs/A)	Berry yield (tons/A)	Adj. yield 110 TU (tons/A)	Plants per Acre (1000)
EXP773	53	1278	1363	4.4	11.6	24.2	36.5	19.2	3.5	0.7	0.0	2.8	67	3666.3	1.8	n/a	504051
EXP773	56	1390	1394	0.8	1.5	5.7	21.8	43.6	25.2	1.5	0.0	3.9	108	5896.2	3.0	3.0	593246
Nitro	57	1424	1451	10.9	48.9	35.7	3.4	1.0	0.2	0.0	0.0	1.5	96	2919.6	1.5	1.9	587023
Nitro	58	1453	1435	9.4	35.9	48.7	5.1	0.8	0.0	0.0	0.0	1.7	119	3355.2	1.7	1.8	597394
CS-560DAF	53	1278	1339	5.1	16.2	30.9	36.2	11.6	0.0	0.0	0.0	2.5	80	4765.7	2.4	n/a	624360
CS-560DAF	55	1351	1353	1.6	3.3	18.0	52.4	22.7	1.9	0.2	0.0	3.0	109	4669.2	2.3	2.4	650289
GVS 518	57	1424	1451	2.0	3.0	8.9	32.0	40.6	12.4	1.1	0.0	3.6	96	5139.1	2.6	3.2	596357
GVS 518	58	1453	1447	2.3	2.2	6.3	28.5	49.3	10.7	0.8	0.0	3.6	113	5460.6	2.7	2.7	507163
BSC489	58	1453	1441	8.3	21.2	49.4	20.5	0.7	0.0	0.0	0.0	2.0	116	4319.7	2.2	2.1	533091
BSC489	59	1485	1431	3.7	15.0	50.0	29.9	1.0	0.3	0.0	0.0	2.2	137	4999.0	2.5	2.2	581837
PLS-566	61	1551	1511	1.2	0.8	2.7	8.9	34.8	46.0	5.4	0.2	4.4	130	8727.6	4.4	3.9	553834
PLS-586	60	1515	1497	1.2	1.0	4.1	21.2	60.5	11.4	0.7	0.0	3.8	119	7571.0	3.8	3.6	560057
Pea Wee	59	1485	1518	11.5	20.7	44.7	21.4	1.5	0.2	0.0	0.0	2.1	93	4070.8	2.0	2.7	643029
Pea Wee	61	1551	1549	7.2	15.0	35.2	40.9	1.7	0.0	0.0	0.0	2.3	112	5574.6	2.8	2.8	632657
GVS828	59	1485	1481	2.2	2.4	6.4	32.0	51.0	6.0	0.0	0.0	3.5	113	6331.8	3.2	3.3	562131
GVS828	60	1515	1469	2.3	1.5	2.5	15.0	55.1	22.2	1.3	0.0	4.0	133	7068.1	3.5	3.2	649251
Boogie	60	1515	1509	2.5	1.5	4.2	17.4	40.0	30.1	4.3	0.0	4.1	114	7410.4	3.7	3.6	615026
CS-492AF	60	1515	1451	1.5	2.0	5.6	21.7	47.6	19.6	2.0	0.0	3.8	142	8245.3	4.1	3.6	562131
Da 1470	60	1515	1489	1.7	1.3	3.2	29.8	57.0	7.0	0.0	0.0	3.7	123	7477.8	3.7	3.4	660660
SV1231QF	61	1551	1555	1.7	4.4	10.2	30.8	42.9	9.1	1.0	0.0	3.5	109	6549.6	3.3	3.3	645103
PLS-602	61	1551	1551	3.0	7.5	19.6	59.5	9.0	1.3	0.0	0.0	2.8	110	7301.5	3.7	3.7	557983
Rihanna	61	1551	1567	18.6	44.1	35.4	1.9	0.0	0.0	0.0	0.0	1.5	102	5776.9	2.9	3.2	787191
EXP069	61	1551	1489	1.0	0.3	1.5	11.2	40.4	42.6	3.0	0.0	4.3	141	7576.0	3.8	3.3	650289
FP2278	60	1515	1497	1.8	1.8	3.3	16.4	58.8	16.5	1.3	0.0	3.9	119	6808.8	3.4	3.2	576651
CS-468AF	60	1515	1481	1.0	1.0	2.4	19.1	53.0	21.6	1.8	0.0	4.0	128	8639.0	4.3	3.9	607766

**Table 4 continued: Maturity, Sieve Distribution and Yield**

Cultivar	Days to harv.	GDD (40F)	Adj. GDD 110 TR	% Sieve >1	% Sieve 1	% Sieve 2	% Sieve 3	% Sieve 4	% Sieve 5	% Sieve 6	% Sieve 6>	Sieve size index	Ten. (TU)	Berry yield (lbs/A)	Berry yield (tons/A)	Adj. yield 110 TU (tons/A)	Plants per Acre (1000)
SV0823QG	61	1551	1565	1.4	6.5	19.5	48.1	22.3	2.2	0.0	0.0	2.9	103	5087.2	2.5	2.8	630583
Ricco	57	1424	1486	2.9	6.7	16.6	43.7	27.0	3.1	0.0	0.0	3.0	79	6269.5	3.1	n/a	584949
Ricco	59	1485	1505	2.0	2.8	6.5	23.0	51.3	13.4	1.0	0.0	3.7	100	8696.4	4.4	4.9	605691
Jerome	61	1551	1513	0.5	0.5	3.9	25.2	52.3	16.8	0.8	0.0	3.8	129	8805.3	4.4	3.9	573540
BSC482	62	1585	1561	17.6	20.5	31.6	21.8	4.1	3.1	1.2	0.0	2.3	122	4496.0	2.3	2.1	637843
BSC737	62	1585	1549	0.8	1.7	4.5	19.1	48.5	23.4	2.0	0.0	3.9	128	6300.6	3.2	2.9	507163
SV6844QG	63	1618	1638	1.5	2.2	6.6	18.8	34.5	33.6	2.8	0.0	4.0	100	6056.9	3.0	3.4	473974
SV6844QG	64	1649	1625	0.8	1.3	3.0	11.6	27.0	49.9	6.4	0.0	4.4	122	6850.0	3.4	3.2	499903
PLS196	62	1585	1610	1.5	4.4	10.4	23.0	39.1	20.8	0.8	0.0	3.7	98	6539.2	3.3	3.9	572503
PLS196	63	1618	1630	1.8	4.3	7.3	22.1	34.6	27.1	2.7	0.0	3.8	104	6435.5	3.2	3.4	473974
CS-515AF	62	1585	1525	1.5	2.8	6.0	19.0	42.7	26.3	1.7	0.0	3.9	140	6886.6	3.4	3.0	672069
CS-517AF	64	1649	1661	11.9	24.0	35.4	22.9	5.8	0.0	0.0	0.0	2.1	104	2162.4	1.1	1.2	506125
CS-517AF	65	1684	1676	10.9	20.1	28.3	25.3	11.3	3.7	0.4	0.0	2.5	114	2805.5	1.4	1.4	582874
EXP649	62	1585	1590	1.8	2.3	5.8	18.4	33.9	31.8	6.0	0.0	4.1	108	6736.0	3.4	3.4	556946
EXP649	63	1618	1614	1.0	2.0	5.0	15.7	30.2	36.6	9.5	0.0	4.2	112	7146.0	3.6	3.5	544500
Festivert	63	1618	1618	25.9	27.5	35.3	11.0	0.3	0.0	0.0	0.0	1.8	110	2966.0	1.5	1.5	548648
Festivert	64	1649	1625	14.2	26.3	41.9	15.7	1.2	0.7	0.0	0.0	1.9	122	3007.7	1.5	1.4	464640
Ballade	66	1719	1769	3.9	11.8	27.0	38.5	15.5	3.3	0.0	0.0	2.7	85	4314.5	2.2	3.8	539314
Ballade	68	1783	1779	1.7	5.2	17.6	41.9	27.6	5.8	0.2	0.0	3.1	113	5875.4	2.9	2.9	574577
SV5685QG	70	1845	1880	0.7	2.5	4.8	13.5	28.6	38.6	11.1	0.2	4.3	92	4247.1	2.1	n/a	503014
SV5685QG	71	1872	1868	0.3	1.0	2.7	9.7	27.3	39.3	17.4	2.2	4.6	112	4651.6	2.3	2.4	497829



#### **Explanations for Headings in Table 4:**

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

**Growing Degree Days (GDD)** - Accumulation of heat units (base 40 degree F.) from planting until harvest.

**Adjusted Growing Degree Days** – GDD were adjusted based off of an 110 tenderometer reading. For every tenderometer unit below 110, two GDD were added, similarly, for every tenderometer unit about 110, two GDD were subtracted.

**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 Texturegage was used to determine the tenderometer units of each harvested plot. The average of the three harvested plots per cultivar was listed.

**Berry 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.

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

**Adjusted Yield lbs/acre** – A correction factor was used to adjust yield based on a tenderometer reading of 110. For example, if a sample read 90 Tenderometer Units, we would then multiple the yield by a correction factor of 1.42. Please see correction factors in Table 7.

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

**Plants per Acre** - An extrapolation of the number of harvested plants to plants per acre.

**Table 5: Plant and Pod Characteristics**

Cultivar	Nodes to Flower (mean)	Nodes w/ Pods/Plt. (mean)	Pods/Plant (mean)	Plant Length (in) (mean)	Pod Length (in) (mean)	Berries per Pod (mean)	Singles per Plant (mean)	Doubles per Plant (mean)	Triples per Plant (mean)	% Singles	% Doubles	% Triples
Eldorado	9.73	2.40	2.80	19.80	2.54	5.70	2.00	0.40	0.00	83	17	0
Premium	9.40	2.83	3.37	16.65	2.84	6.50	2.30	0.53	0.00	81	19	0
FP2269	9.93	1.80	2.53	16.65	2.60	6.30	1.07	0.73	0.00	59	41	0
CS-504AF	9.10	1.57	2.07	17.75	2.42	5.10	1.07	0.50	0.00	68	32	0
SV3628QH	9.43	1.83	2.73	14.45	2.40	6.40	0.97	0.83	0.03	53	45	2
GVS 1751	9.93	1.40	2.27	14.00	2.55	6.00	0.53	0.87	0.00	38	62	0
SV6485QH	11.03	2.23	2.83	14.40	2.45	5.20	1.63	0.60	0.00	73	27	0
DGL-0027	10.13	2.30	3.23	21.30	3.49	7.50	1.40	0.87	0.33	61	38	1
EXP455	9.56	1.17	1.70	14.05	2.45	5.70	0.63	0.53	0.00	54	46	0
EXP776	10.80	2.87	4.63	20.05	2.70	7.60	1.10	1.77	0.00	38	62	0
PLS-228	11.07	2.17	3.23	19.60	3.15	6.20	1.10	1.07	0.00	51	49	0
Saltingo	8.60	2.73	4.07	23.80	3.25	7.50	1.40	1.33	0.00	51	49	0
Portage	9.73	3.10	5.90	22.15	2.79	6.40	1.07	1.27	0.77	34	41	25
EXP773	9.83	2.87	4.63	20.05	2.85	6.70	1.20	1.57	0.10	42	55	3
Nitro	11.23	3.07	5.66	20.65	2.47	7.30	0.90	1.73	0.43	29	57	14
CS-560DAF	9.46	2.57	3.43	16.35	2.65	6.60	1.76	0.73	0.07	69	28	3
GVS 518	9.33	2.93	3.63	19.05	3.65	8.00	2.23	0.70	0.00	76	24	0
BSC489	10.96	3.03	5.66	20.50	2.35	7.40	1.13	1.17	0.73	37	39	24
PLS-566	10.50	2.57	3.57	20.70	3.10	7.20	1.57	1.00	0.00	61	39	0
PLS-586	10.63	1.97	3.10	20.90	3.26	7.40	0.90	1.00	0.07	46	51	3
Pea Wee	11.10	3.30	4.87	24.90	2.29	6.50	1.73	1.57	0.00	53	47	0
GVS828	12.17	2.53	5.37	29.85	2.77	5.20	0.63	0.97	0.93	25	38	37
Boogie	13.40	2.03	3.57	22.75	3.03	5.10	0.83	0.87	0.33	41	43	16
CS-492AF	9.90	2.70	5.07	18.15	2.40	6.50	0.90	1.23	0.57	33	46	21

**Table 5 continued: Plant and Pod Characteristics**

Cultivar	Nodes to Flower (mean)	Nodes w/ Pods/Plt. (mean)	Pods/Plant (mean)	Plant Length (in) (mean)	Pod Length (in) (mean)	Berries per Pod (mean)	Singles per Plant (mean)	Doubles per Plant (mean)	Triples per Plant (mean)	% Singles	% Doubles	% Triples
Da 1470	10.70	2.70	5.37	23.45	2.70	5.70	0.70	1.33	0.66	26	49	25
SV1231QF	11.96	2.73	4.50	27.65	2.65	5.80	1.13	1.43	0.17	41	52	7
PLS-602	11.37	3.13	5.23	26.50	2.80	6.70	1.03	2.10	0.00	33	67	0
Rihanna	11.83	3.03	5.27	17.90	2.20	6.90	1.27	1.30	0.47	42	43	15
EXP069	10.37	3.10	5.50	23.50	3.10	7.50	1.10	1.60	0.40	35	52	13
FP2278	12.03	2.43	4.23	22.50	2.75	7.80	0.67	1.73	0.03	28	71	1
CS-468AF	12.50	2.63	4.17	26.00	3.00	6.10	1.10	1.53	0.00	42	58	0
SV0823QG	14.17	2.40	4.77	26.45	2.85	6.00	0.87	0.70	0.83	36	29	35
Ricco	12.23	2.80	4.50	28.25	3.05	5.70	1.10	1.70	0.00	39	61	0
Jerome	11.30	2.93	5.03	29.55	2.60	7.90	1.07	1.63	0.23	36	56	8
BSC482	15.43	2.17	3.57	19.10	2.40	7.80	0.83	1.27	0.07	38	58	4
BSC737	14.30	2.37	4.43	24.40	2.70	6.00	0.77	1.13	0.47	32	48	20
SV6844QG	14.60	3.20	5.10	26.95	3.00	6.00	1.47	1.57	0.17	46	49	5
PLS196	11.97	3.03	5.23	23.50	3.10	8.40	1.17	1.53	0.33	38	51	11
CS-515AF	13.70	2.93	4.93	27.20	2.70	6.20	1.23	1.40	0.30	42	48	10
CS-517AF	12.90	2.70	4.83	21.30	2.50	6.30	1.10	1.07	0.53	41	39	20
EXP649	12.80	2.70	4.30	22.15	2.95	6.30	1.33	1.13	0.23	49	42	9
Festivert	14.57	3.20	5.10	19.75	2.55	7.30	1.30	1.90	0.00	41	59	0
Ballade	16.87	3.23	5.37	28.10	2.70	7.70	1.60	1.13	0.50	50	35	15
SV5685QG	20.03	1.93	2.87	31.50	3.30	6.00	1.13	0.67	0.13	59	34	7

### **Explanation for Headings in Table 5:**

This data was derived from 30 plants harvested the same day as our yield harvest that was closest to our objective of 110 tenderometer unit reading. 30 plants, 10 from each of the 3 replicated plots were harvested, then weighed and pods were hand stripped and berries were hand shelled.

**Nodes to first flower** - The average number of nodes on the stem until the first flower (starting at the soil line node).

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

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

**Plant Length** – Vines were measured from soil line on root to top tip of plant.

**Pod length** - An average of 10 pods were lined up and measured in inches.

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

**Number and 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.

**Table 6: Weather Summary and Adjusted Yield Factors**

Day	Mean Temp. (F)	Max Temp. (F)	Min. Temp. (F)	Daily Precip. (in)	Accum. Precip. (in)	GDD Base 40F	Acc. GDD Base 40F	Tend. Units (TU)	Correlation Factor for Yield
5/11/23	61.40	76.60	46.20	0.00	0.00	21.00	21.00	80	2.33
5/12/23	72.50	81.50	63.50	0.00	0.00	33.00	54.00	81	2.18
5/13/23	64.20	70.70	57.60	0.00	0.00	23.00	77.00	82	2.05
5/14/23	50.40	56.70	44.10	0.00	0.00	10.00	87.00	83	1.93
5/15/23	55.50	70.50	40.60	0.00	0.00	16.00	103.00	84	1.82
5/16/23	59.00	72.90	45.10	0.00	0.00	19.00	122.00	85	1.72
5/17/23	41.30	47.70	34.90	0.00	0.00	1.00	123.00	86	1.64
5/18/23	48.10	64.80	31.50	0.00	0.00	8.00	131.00	87	1.57
5/19/23	63.50	75.40	51.60	0.00	0.00	24.00	154.00	88	1.51
5/20/23	57.90	64.40	51.30	0.89	0.89	17.00	171.00	89	1.46
5/21/23	61.40	72.30	50.50	0.00	0.89	21.00	193.00	90	1.42
5/22/23	56.30	63.90	48.60	0.00	0.89	15.00	208.00	91	1.38
5/23/23	60.30	76.80	43.70	0.00	0.89	20.00	228.00	92	1.34
5/24/23	57.10	69.60	44.60	0.01	0.90	17.00	245.00	93	1.31
5/25/23	47.50	56.50	38.50	0.00	0.90	8.00	253.00	94	1.28
5/26/23	52.50	68.00	37.00	0.00	0.90	13.00	265.00	95	1.25
5/27/23	58.80	76.30	41.40	0.00	0.90	19.00	284.00	96	1.22
5/28/23	64.30	80.10	48.40	0.00	0.90	24.00	308.00	97	1.19
5/29/23	65.90	82.20	49.60	0.00	0.90	26.00	334.00	98	1.17
5/30/23	70.60	84.20	57.00	0.00	0.90	31.00	365.00	99	1.15
5/31/23	73.30	86.20	60.40	0.00	0.90	33.00	398.00	100	1.13

**Table 6 continued: Weather Summary and Adjusted Yield Factors**

Day	Mean Temp. (F)	Max Temp. (F)	Min. Temp. (F)	Daily Precip. (in)	Accum. Precip. (in)	GDD Base 40F	Acc. GDD Base 40F	Tend. Units (TU)	Correlation Factor for Yield
6/1/23	72.40	87.60	57.20	0.00	0.90	32.00	431.00	101	1.11
6/2/23	73.00	87.80	58.10	0.00	0.90	33.00	464.00	102	1.09
6/3/23	64.10	71.40	56.70	0.00	0.90	24.00	487.00	103	1.07
6/4/23	56.40	66.70	46.00	0.00	0.90	16.00	503.00	104	1.06
6/5/23	62.60	72.90	52.20	0.00	0.90	23.00	526.00	105	1.05
6/6/23	60.50	67.30	53.80	0.00	0.90	20.00	546.00	106	1.04
6/7/23	58.40	64.90	51.80	0.00	0.90	18.00	565.00	107	1.03
6/8/23	57.80	63.30	52.20	0.00	0.90	18.00	583.00	108	1.02
6/9/23	57.20	64.90	49.50	0.08	0.98	17.00	600.00	109	1.01
6/10/23	63.80	75.40	52.20	0.00	0.98	24.00	624.00	110	1.00
6/11/23	68.80	80.80	56.70	0.00	0.98	29.00	652.00	111	0.99
6/12/23	65.20	73.00	57.40	1.03	2.01	25.00	677.00	112	0.98
6/13/23	64.40	71.40	57.40	0.86	2.87	24.00	702.00	113	0.97
6/14/23	58.10	61.20	55.00	0.34	3.21	18.00	720.00	114	0.96
6/15/23	65.30	73.60	57.00	0.32	3.53	25.00	745.00	115	0.96
6/16/23	61.30	63.30	59.20	0.17	3.70	20.00	765.00	116	0.95
6/17/23	64.30	72.00	56.50	0.15	3.85	24.00	790.00	117	0.95
6/18/23	65.20	73.60	56.70	0.00	3.85	26.00	815.00	118	0.94
6/19/23	67.10	80.60	53.60	0.00	3.85	27.00	842.00	119	0.94
6/20/23	70.90	80.80	61.00	0.00	3.85	31.00	873.00	120	0.93
6/21/23	70.30	80.40	60.30	0.00	3.85	30.00	904.00	121	0.93
6/22/23	67.30	78.30	56.30	0.00	3.85	27.00	931.00	122	0.92
6/23/23	71.60	76.30	66.90	0.00	3.85	32.00	962.00	123	0.92
6/24/23	71.90	78.10	65.70	0.72	4.57	32.00	994.00	124	0.91
6/25/23	73.70	83.70	63.70	0.00	4.57	34.00	1028.00	125	0.91
6/26/23	72.40	81.10	63.70	0.49	5.06	32.00	1060.00	126	0.90
6/27/23	71.80	79.70	63.90	0.00	5.06	32.00	1092.00	127	0.90
6/28/23	64.40	68.40	60.40	0.00	5.06	24.00	1116.00	128	0.89
6/29/23	68.80	77.90	59.70	0.00	5.06	29.00	1145.00	129	0.89
6/30/23	72.50	84.40	60.60	0.00	5.06	33.00	1178.00	130	0.89

**Table 6 continued: Weather Summary and Adjusted Yield Factors**

Day	Mean Temp. (F)	Max Temp. (F)	Min. Temp. (F)	Daily Precip. (in)	Accum. Precip. (in)	GDD Base 40F	Acc. GDD Base 40F	Tend. Units (TU)	Correlation Factor for Yield
7/1/23	75.00	83.50	66.40	1.57	6.63	35.00	1213.00	131	0.88
7/2/23	73.40	78.10	68.70	0.24	6.87	33.00	1246.00	132	0.88
7/3/23	71.80	75.70	68.00	0.08	6.95	32.00	1278.00	133	0.88
7/4/23	75.30	84.00	66.60	0.05	7.00	35.00	1313.00	134	0.87
7/5/23	77.80	89.40	66.20	0.03	7.03	38.00	1351.00	135	0.87
7/6/23	79.30	91.00	67.60	0.02	7.05	39.00	1390.00	136	0.87
7/7/23	73.30	79.20	67.50	0.05	7.10	33.00	1424.00	137	0.86
7/8/23	69.60	78.40	60.80	0.01	7.11	30.00	1453.00	138	0.86
7/9/23	71.70	79.30	64.00	0.12	7.23	32.00	1485.00	139	0.86
7/10/23	70.10	74.50	65.70	0.07	7.30	30.00	1515.00	140	0.86
7/11/23	76.30	86.20	66.40	0.04	7.34	36.00	1551.00	141	0.85
7/12/23	73.50	79.70	67.30	0.02	7.36	34.00	1585.00	142	0.85
7/13/23	73.00	81.90	64.00	0.03	7.39	33.00	1618.00	143	0.85
7/14/23	71.70	81.30	62.10	0.00	7.39	32.00	1649.00	144	0.85
7/15/23	74.80	87.10	62.60	0.00	7.39	35.00	1684.00	145	0.85
7/16/23	74.70	80.40	68.90	0.22	7.61	35.00	1719.00	146	0.84
7/17/23	74.10	83.80	64.40	0.00	7.61	34.00	1753.00	147	0.84
7/18/23	71.60	77.40	65.70	0.01	7.62	30.00	1783.00	148	0.84
7/19/23	70.00	79.90	60.10	0.00	7.62	30.00	1813.00	149	0.84
7/20/23	71.30	83.70	59.00	0.01	7.63	31.00	1845.00	150	0.84
7/21/23	67.70	74.80	60.60	0.14	7.77	28.00	1872.00	151	0.83

### **Explanation for Headings in Table 6:**

**Mean Temp.** – The daily mean temperature (°F).

**Max Temp.** – The daily maximum temperature (°F).

**Min. Temp.** – The daily minimum temperature (°F).

**Daily Precip.** – The daily amount of precipitation in inches.

**Accum. Precip.** – Accumulated precipitation from the plant date all the way to the last day of harvest (inches).

**GDD Base 40°F** – Growing degree days base 40°F.

**Acc. GDD Base 40°F** – Accumulation of growing degree days, base 40°F, starting from plant date and ending at the final harvest date for the trial.

**Tend. Units** – Tenderometer units are derived from our Model TG4EI Integrating Texturegauge machine.

**Correlation Factor for Yield** – Yield was taken, and depending on what the TU reading was, the yield is then multiplied by the correction factor for an adjusted yield based on an ideal harvest of 110 tenderometer units.



## **Cultivar Descriptions from the Seed Source:**

**Eldorado** – Pure Line, normal leaf, 1110 heat units, 8 nodes to flower. 3.8 sieve index. Excellent early vigor, spring replacement. R: Fop1, IR: Pv

**Premium** – Brotherton, normal leaf, 1150 heat units.

**FP2269** – Gallatin Valley, afila leaf, 1190 heat units. 9 to 10 nodes to flower. 3.8 sieve index. FOP 1; PM1.

**CS-504AF** – Crites, afila leaf, 1200 heat units. 3.7 sieve index. 10 nodes to flower. Pv, PEMV, Fop 1.

**SV3628QH** – Seminis, normal leaf, 1205 heat units, 3.2 sieve index. HR: BYMV/ Fop:1 IR: Pv. 2nd early maturity with medium size plant and intermediate resistance to downy mildew. This variety is commercial in Europe.

**GVS1751** – Gallatin Valley, afila leaf, 1220 heat units, 10 nodes to flower. 3.8 sieve index.

**SV6485QH** – Seminis, determinate normal leaf, 1250 heat units. 3.3 sieve index. HR: Fop1, PEMV/BYMV/ IR:Pv. 2nd early maturity with determinate plant type. Pre-commercial.

**DGL0027** – Pure Line, afila leaf, 1270 heat units, 11 nodes to flower. 3.6 sieve index. Early with downy mildew tolerance. IR: Pv, PEMV.

**EXP455** – Brotherton, afila leaf, 1280 heat units, 9 to 10 nodes to flower. 3.2 sieve index. Tomahawk+ 1/2d, stands well, pod on top, bold premium pod. FW1 & 2:R. 2<sup>nd</sup> early.

**EXP776** – Brotherton, normal leaf, 2<sup>nd</sup> early.

**PLS228** – Pure Line, afila leaf, 1300 heat units, 3.3 sieve size. 10 nodes to flower. IR: Pv. Good back fill variety, consistent.

**Saltingo** – Pure Line, afila leaf, 1330 heat units, 11 nodes to flower. 3.5 sieve index. R: PEMV, Ep, IR: PEMV, Pv. Excellent high yield second early, good disease package.

**Portage** – Crites, afila leaf, 1340 heat units, 10 nodes to flower.

**EXP773** – Brotherton, normal leaf, 1360 heat units, 13 nodes to flower. 3.4 sieve index. Tonic Season+1d, 3s, less root rot than Tonic, good yielder as second early. FW1 & 2:R. 2<sup>nd</sup> early.

**Nitro** – Seminis, normal leaf, 1370 heat units, 2 sieve size, HR: BYMV/FOP. Standard for Intermediate/small sieve pea market.

**CS-560DAF** – Crites, afila leaf, 1370 heat units, 11 nodes to flower. Pv, Ep, PEMV, Fop 1+2.

**GVS518** – Gallatin Valley, afila leaf, 1380 heat units, 12 to 13 nodes to flower. 3.8 sieve index. Pemv;PM.

**BSC489** – Brotherton, afila leaf, 1383 heat units, 12 to 13 nodes to flower. 1.9 sieve index. Nitro/Digit season, determinate, good uniform early pod, light pea color, stands well, yield good. FW1 & 2:R, DM:T. 2<sup>nd</sup> early petite.

**PLS566** – Pure Line, afila leaf, 1400 heat units, 12 nodes to flower. 3.8 sieve index. R: Fop1, Ep, IR: Pv. Consistent main season variety with some drought tolerance.

**PLS586** – Pure Line, afila leaf, 1420 heat units, 12 nodes to flower. 4 sieve index. Strong root, large sieve. R: Fop1, Ep, IR: Fop2.

**Pea wee** – Pure Line, normal leaf, 1450 heat units, 14 nodes to flower. 2.5 sieve size. R: Fop1, Ep, IR: Pv, Ap. Smaller "garden sieve" type, high tolerance to downy mildew.

**GVS828** – Gallatin Valley, afila leaf, 1450 heat units, 14 to 15 nodes to flower. 3.7 sieve index.

**Boogie**– Brotherton, afila leaf, 1470 heat units.

**CS-492AF** – Crites, afila leaf, 1470 heat units, 12 nodes to flower. 3.4 sieve index. Mid-early afila, with a good disease resistance package. Ep, PEMV, Fop1, Fop2.

**DA 1470** – Seminis, determinate afila leaf, 1470 heat units, 12 to 15 nodes to flower. Sweet savor gene.

**SV123IQF** – Seminis, afilia leaf, 1480 heat units, 15 nodes to flower. 3.2 sieve index. Sweet savor gene. HR PEMV/Ep/Fop:1,2 IR PV. Sweet Savor trait, Improved Disease resistance with High Resistance to Pea enation mosaic virus and powdery mildew plus intermediate resistance to downy mildew. Pre-commercial.

**PLS602** – Pure Line, afila leaf, 1490 heat units, 14 nodes to flower. 3.1 sieve index. Healthy plant, smaller sieve size. R: Fop1, PEMV, Ep, IR: Fop2. Strong root, nice sieve size main season type.

**Rihanna** – Pure Line, 1500 heat units, 1.8 sieve size. R: Fop1, BLRV, Pv. Late season petite.

**EXP069** – Brotherton, afilia leaf, mid-season.

**FP2278** – Gallatin Valley, afila leaf, 1500 heat units, 14 to 15 nodes to flower. 3.6 sieve index. Fop 1, 2; PM1.

**CS-468AF** – Crites, afila leaf, 1520 heat units, 14 nodes to flower. 4.0 sieve index. Ep, PEMV, Fop 1.

**SV0823QG** – *Seminis*, *afila leaf*, 1525 heat units, 17 nodes to flower. 3.3 sieve index. HR PEMV/Ep/Fop:1,2 IR Pv. Full/late *Afila* with good disease resistance and high yield potential. Commercial Variety in North America & Europe.

**Ricco** – Gallatin Valley, *afila leaf*, 1530 heat units, 15 to 16 nodes to first flower. 3.8 sieve index. Fop 1,2; PM 1; BLRV.

**Jerome (712)** – Brotherton, *afila leaf*, 1530 heat units.

**BSC482** – Brotherton, *afilia leaf*, 1545 heat units.

**BSC737** – Brotherton, *afila leaf*, 1560 heat units, 15 to 17 nodes to flower. 3.6 sieve index. Fantasy Season+1d, longer Fantasy pod (, stands well, lodging tolerant, tall robust plant structure, yield very good. FW1 & 2:R,PM:R. Full season.

**SV6844QG** – *Seminis*, *faciated afila*, 1600 heat units, 17 nodes to flower. 3.6 sieve index. Sweet savor gene. HR BYMV/PEMV/Ep/Fop:1,2 IR Pv. Late maturity *Afila* with fasciated stem and Sweet Savor trait. It has very good disease resistance with high yield potential.

**PLS196** – Pure Line, *afila leaf*, 1600 heat units, 15 nodes to flower. 3.9 sieve index. Consistently healthy, full season. R: Fop1, Ep.

**CS-515AF** – Crites, *afilia leaf*, 1620 heat units, 15 nodes to flower. 3.8 sieve index. Ep, PEMV, Fop 1+2.

**CS-517AF** – Crites, *afila leaf*, 1650 heat units, 16 nodes to flower. 3.5 sieve index. Pv, Ep, PEMV, Fop 1+2.

**EXP649** – Brotherton, *afila leaf*, 1650 heat units, 14 to 15 nodes to flower. 3.6 sieve index. Concept Season+1d, Feisty/Boogie pod, stands well, good looking pod, yield very good. FW1 & 2, PEMV:R. Full season.

**Festivert** – Syngenta.

**Ballade** – Pure Line, *afilia leaf*, 1700 heat units. 3.2 sieve size. R: Fop1, Ep, PEMV, IR: Pv. Late season type.

**SV5685QG** – *Seminis*, *normal leaf*, 1750 heat units, 14 nodes to flower. 3.4 sieve index. HR BYMV/PEMV/Ep/Fop:1. A very late maturity variety for processors wanting to extend harvest later in the season. Commercial variety in Europe.

***- 2023 Annual Cutting -***

A vegetable “cutting”, was held on November 7th, where frozen peas, snap beans, and sweet corn were put on display for processors and seed companies to evaluate. Large and 3-4 sieve snap beans were canned and also put on display. Our vegetable cutting is the final step of our program’s evaluation. We evaluate the horticultural characteristics in the field and in raw products, but our vegetable cutting takes us all the way to quality evaluation on the plate.