

# NEW YORK STATE 2020 PROCESSING PEA CULTIVAR TRIAL REPORT

**Michael Rosato** - Research Support Specialist, Horticulture Section  
Cornell AgriTech (NYSAES) - Cornell University, Geneva, New York

**Stephen Reiners** - Professor and Chair, Horticulture Section  
Cornell AgriTech (NYSAES) - Cornell University, Geneva, New York

*We wish to thank the NYS Vegetable Research Council and Association and cooperating seed companies for their financial support of the project. We wish to thank Mr. Buzz Lowe of Farm Fresh First for his assistance in planning the trials. Also, a special thank you to our only two employees, Kim Day and Carla Yannotti, for their assistance in day to day operations during this challenging year*

## Table of Contents

<i>Pages 1</i>	<i>Title Page and Table of Contents</i>
<i>Page 2</i>	<i>Table 1 - Sieve Size Diameters</i>
<i>Pages 3</i>	<i>Table 2 Cultivar List and Seed Company Maturity</i>
<i>Pages 4</i>	<i>Table 3 Plant Characteristics</i>
<i>Pages 5 &amp; 6</i>	<i>Table 4 - Maturity, Sieve Information and Yield</i>
<i>Page 7</i>	<i>Explanations for Table 4</i>
<i>Pages 8.</i>	<i>Table 5 Plant and Pod Characteristics</i>
<i>Pages 9</i>	<i>Explanation for Table 5</i>
<i>Pages 10.</i>	<i>Table 6 Tenderometer readings and Maturity</i>
<i>Pages 11-13.</i>	<i>Table 7 Weather Summary and 110 tenderometer unit adjustment chart</i>
<i>Pages 14 &amp; 15.</i>	<i>Cultivar Descriptions from the Seed Source</i>

\*Contact information - Michael Rosato, email: [mwr54@cornell.edu](mailto:mwr54@cornell.edu) , office: (315) 787-2223

## **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** – 5/15. Picking started on 6/30 and we finished on 7/16. **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 shoot 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 Texturegage** – 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 11/19 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 Seedbuero 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 decent at planting. The day after planting, we received about 0.5 inches of rain in about 2 hours. The intense rain event, followed by dry hot weather, formed a shallow crust layer. Lack of moisture after planting, and a thin crust layer, delayed emergence and led to some spotty patches in plots. About a week and a half after planting we irrigated to help break up crust and irrigated again around widespread flower development. Drought and heat were the main elemental factors during the growing season. High heat and low moisture seemed to impact yield, especially with the early varieties and caused mid/late season varieties to have a short harvest window. 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**

<b>Cultivar</b>	<b>GDD (40F)</b>	<b>Seed Source</b>	<b>Leaf Type</b>	<b>Seed Treatment</b>	<b>Seed Count/lb</b>	<b>Germ. %</b>	<b>Sieve index</b>	<b>Node to blossom</b>
Spring	1050	Pureline	normal leaf	maxim, Apron, Cruiser	2013	93	3.9	8 to 9
Eldorado	1100	Pureline	normal leaf	Vibrance/LSV	1960	90	3.8	9 to 10
Sherwood	1160	Seminis	normal leaf	allegiance, captan, cruiser	2400	99	3.3	9 to 10
EXP461	1260	Brotherton	afila	maxim, ipconazoleapron, cruiser	2400	95	3.3	10 to 11
GVS1703	1230	GV	n/a	n/a	n/a	99	n/a	10
CS-455AF	1355	Crites	afila	maxim, Apron, Cruiser	2100	99	3.7	10
Portage	1305	Crites	afila	Maxim/Apron XL	2032	99	3.8	8 to 11
BSC905	1370	Brotherton	normal leaf	maxim, ipconazoleapron, cruiser	4700	97	1.3	12
GVS518	1350	GV	afila	maxim, Apron, Cruiser	2502	96	3.8	9 to 11
SV8112QH	1430	Seminis	Det afila	A, C, Cr	2270	99	3.1	10 to 13
Nitro	1370	Seminis	normal leaf	allegiance, captan, cruiser	4800	98	2	13 to 14
CS-494DAF	1470	Crites	afila	maxim, Apron, Cruiser	2800	97	3.1	12 to 13
DA 1470	1470	Seminis	Det afila	A, C, Cr	2895	100	3.2	12 to 15
BSC599	1620	Brotherton	afila	maxim, ipconazoleapron, cruiser	2600	95	4.1	14 to 17
CS-464DAF	1565	Crites	afila	maxim, Apron, Cruiser	2400	99	3.7	15
Ricco	1530	GV	afila	maxim, Apron, Cruiser	2265	97	3.7	12 to 15
BSC712	1530	Brotherton	afila	Maxim/Apron XL	2300	96	4.4	13 to 15
98-326	1400	Pureline	afila	Vibrance/LSV	2873	95	2.9	16 to 18
SV0823QG	1525	Seminis	afila	allegiance, captan, cruiser	2600	95	3.3	17
PLS196	1580	Pureline	afila	maxim, Apron, Cruiser	2302	93	3.6	11 to 16
Dancer	1460	Pureline	afila	maxim, Apron, Cruiser	2592	95	3	10 to 13
SV5685QG	1750	Seminis	normal leaf	allegiance, captan, cruiser	2436	95	3.4	18 to 21

**Table 3. Plant Characteristics**

Cultivar	Plant Stand Rating	GDD to full flower	Root Rot Rating	Plant Habit Rating (Harvest)	Yield Rating	Overall Rating
Spring	2.5	782	5.0	2.5	2.8	3.2
Eldorado	2.5	823	5.0	2.5	3.0	3.3
Sherwood	3.0	823	5.0	3.0	2.9	3.5
EXP461	3.0	883	5.0	3.5	4.3	4.0
GVS1703	3.0	883	5.0	2.5	3.2	3.4
CS-455AF	4.0	915	5.0	4.5	5.0	4.6
Portage	4.0	915	5.0	4.5	4.1	4.4
BSC905	2.5	1023	5.0	3.0	2.7	3.3
GVS518	4.0	1023	5.0	3.5	3.0	3.9
SV8112QH	3.5	1087	5.0	4.5	2.1	3.8
Nitro	2.5	1087	5.0	3.5	3.5	3.6
CS-494DAF	3.5	1114	5.0	4.0	2.2	3.7
DA 1470	3.5	1114	5.0	4.3	2.7	3.9
BSC599	3.5	1146	5.0	3.8	4.3	4.1
CS-464DAF	3.5	1146	5.0	3.0	4.0	3.9
Ricco	4.0	1146	5.0	2.5	4.5	4.0
BSC712	3.5	1175	5.0	2.5	4.2	3.8
98-326	3.5	1175	5.0	2.5	3.0	3.5
SV0823QG	3.5	1175	5.0	4.0	3.4	4.0
PLS196	4.0	1208	5.0	2.5	4.2	3.9
Dancer	3.5	1208	5.0	2.5	4.5	3.9
SV5685QG	3.5	1341	5.0	3.0	2.5	3.5

\* Scale: 1 worst, 5 best

\* Adjusted yield, from table 4, was used to calculate yield rating

\*Overall rating is an average from plant stand, root rot rating, plant habit at harvest and yield rating

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

Cultivar	Days to harv.	GDD	% Sieve >1	% Sieve 1	% Sieve 2	% Sieve 3	% Sieve 4	% Sieve 5	% Sieve 6	% Sieve 6>	Sieve size index	Ten.	Berry Yield (lbs/A)	Berry Yield (tons/A)	Adjusted Yield Based on 110 TU	Adjusted Tons/Acre (110 TU)	Plants per A (1000)	Plts. per foot
Spring	46	1270	0	1	1	5	21	39	30	1	4.9	118	4248	2.1	3993	1.9	416	4.8
Eldarado	46	1302	1	1	3	12	25	50	8	1	4.5	117	4456	2.2	4233	2.1	356	4.1
Eldarado	47	1341	0	1	2	7	20	58	12	1	4.7	126	4057	2.0	3651	1.8	310	3.6
Sherwood	46	1302	1	1	2	10	29	47	11	1	4.5	125	4547	2.3	4138	2.1	452	5.2
Sherwood	47	1341	0	0.5	1	5	23	51	18	1	4.8	149	4792	2.4	4025	2.0	445	5.1
EXP461	48	1341	3	8	14	30	39	5	1	0	3.2	94	3879	1.9	4965	2.5	489	5.6
EXP461	49	1378	7	10	14	27	28	10	5	0	3.3	104	5708	2.9	6050	3.0	511	5.9
GVS1703	47	1302	1	4	9	25	40	17	1	0	3.6	87	3410	1.7	5354	2.7	360	4.1
GVS1703	48	1341	1	3	6	16	43	26	3	1	3.9	100	3808	1.9	4303	2.2	334	3.8
GVS1703	49	1378	2	3	6	16	34	35	4	1	4.1	114	4734	2.4	4545	2.3	364	4.2
CS-455AF	48	1341	2	3	6	21	42	20	2	0	3.8	94	4787	2.4	6127	3.1	462	5.3
CS-455AF	49	1378	0	1	3	16	40	36	4	0	4.2	113	7327	3.7	7107	3.6	490	5.6
Portage	49	1378	7	8	11	19	26	20	7	0	3.7	95	7239	3.6	9049	4.5	461	5.3
Portage	50	1415	0.5	1	3	16	40	36	4	0	4.2	113	5928	3.0	5750	2.9	427	4.9
BSC905	49	1378	7	20	36	27	9	0.5	0	0	2.3	104	3568	1.8	3782	1.9	427	4.9
BSC905	50	1415	4	12	29	43	10	2	1	0	2.6	130	4070	2.0	3622	1.8	364	4.2
GVS518	50	1415	2	3	11	27	44	11	2	0	3.6	90	3277	1.6	4653	2.3	488	5.6
GVS518	51	1450	2	2	6	21	46	22	2	0	3.9	100	4319	2.2	4880	2.4	455	5.2
GVS518	52	1487	2	2	4	16	43	30	3	0.5	4.1	113	4397	2.2	4265	2.1	474	5.4
SV8112QH	52	1487	1	3	7	28	38	19	3	0	3.7	108	2867	1.4	2924	1.5	387	4.4

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

Cultivar	Days to harv.	GDD	% Sieve >1	% Sieve 1	% Sieve 2	% Sieve 3	% Sieve 4	% Sieve 5	% Sieve 6	% >6 Sieve	Sieve size index	Ten.	Berry Yield (lbs/A)	Berry Yield (tons/A)	Adjusted Yield Based on 110 TU	Adjusted Tons/Acre (110 TU)	Plants per A (1000)	Plts. per foot
Nitro	51	1450	9	30	37	17	2	1	0.5	0	2.0	87	2460	1.2	3862	1.9	368	4.2
Nitro	52	1487	3	15	38	31	5	1	0	0	2.3	97	2875	1.4	3421	1.7	329	3.7
Nitro	53	1526	3	9	26	52	7	0.5	0	0	2.6	108	4891	2.5	4989	2.5	351	4.0
CS-494DAF	53	1526	2	4	14	35	31	6	1	0	3.3	94	2692	1.4	3446	1.7	428	4.9
CS-494DAF	54	1563	6	3	11	37	38	12	2	0.5	3.5	113	3207	1.6	3111	1.6	442	5.1
DA 1470	53	1526	1	2	6	25	44	17	4	0	3.8	95	3414	1.7	4268	2.1	453	5.2
DA 1470	54	1563	2	2	5	16	41	32	7	1	4.1	107	3659	1.8	3769	1.9	415	4.8
BSC599	54	1563	2	2	6	9	20	51	15	2	4.5	129	6845	3.4	6092	3.0	565	6.5
CS-464DAF	55	1604	1	1	3	16	39	29	5	0.5	4.2	116	5912	3.0	5616	2.8	456	5.2
CS-464DAF	56	1645	1	1	3	13	40	34	6	0	4.2	141	6202	3.1	5272	2.6	421	4.8
Ricco	54	1563	1	2	6	17	38	32	2	0	4.0	102	5808	2.9	6331	3.2	519	6.0
Ricco	55	1604	2	2	5	15	33	41	6	1	4.2	110	6459	3.2	6459	3.2	511	5.9
BSC712	54	1563	2	3	6	16	37	36	5	1	4.1	107	5800	2.9	5974	3.0	510	5.9
BSC712	55	1604	0.5	0	1	10	32	44	6	1	4.5	139	6654	3.3	5722	2.9	511	5.9
98-326	55	1604	2	6	23	48	16	1	0.5	0	2.8	106	3962	2.0	4120	2.0	451	5.2
98-326	56	1645	2	7	18	51	21	1	0	0	2.9	122	4617	2.3	4248	2.1	490	5.6
SV0823QG	57	1682	1	2	6	19	43	26	3	1	3.9	127	5314	2.7	4783	2.4	461	5.3

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

Cultivar	Days to harv.	GDD	% Sieve >1	% Sieve 1	% Sieve 2	% Sieve 3	% Sieve 4	% Sieve 5	% Sieve 6	% > Sieve	Sieve size index	Ten.	Berry Yield (lbs/A)	Berry Yield (tons/A)	Adjusted Yield Based on 110 TU	Adjusted Tons/Acre (110 TU)	Plants per A (1000)	Plts. per foot
PLS196	55	1604	2	4	7	24	39	17	0.5	0	3.7	84	4858	2.4	8842	4.4	510	5.9
PLS196	56	1645	2	3	6	18	42	27	2	0	3.9	92	5796	2.9	7767	3.9	480	5.5
PLS196	57	1682	1	3	5	14	42	31	3	0	4.0	110	5932	3.0	5932	3.0	464	5.3
Dancer	55	1604	2	6	18	37	25	6	1	0	3.1	87	3862	1.9	6063	3.0	468	5.4
Dancer	56	1645	2	5	11	36	36	4	0.5	0	3.3	88	4734	2.4	7148	3.6	478	5.5
Dancer	58	1717	1	2	5	20	47	24	2	0	3.9	112	6505	3.3	6375	3.2	485	5.6
SV5685QG	61	1810	1	2	5	9	17	36	29	3	4.7	89	2995	1.5	4373	2.2	427	4.9
SV5685QG	62	1844	1	2	3	7	15	31	31	6	4.8	105	3410	1.7	3581	1.8	481	5.5

**Explanation 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.

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

**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.

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

**Adjusted Yield lbs/acre** - A corrigation 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 corrigation factor of 1.42. Please see corrigation 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.

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

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

Cultivar	Node to first flower	Vine length avg. (in)	Ht. at harvest (in)	Pods per plant (avg.)	Avg. # nodes w/ pods/plt.	# of Single pods/node	# of Double pods/node	# Triple pods/node	% of Single pods/node	% of Double pods/node	% of Triple pods/node	Berries per pod (avg.)	Pod length (in)
Spring	7-8	16.3	7 to 9	2.9	2.6	2.3	0.3	0.0	88	12	0	6.6	2.75 to 3
Eldorado	8-9	19.9	8 to 11	3.4	3.3	3.2	0.07	0.0	98	2	0	6.8	2.5 to 3
Sherwood	8-9	14.25	8 to 11	2.8	2.5	2.1	0.3	0.0	88	12	0	6	2 to 3
EXP461	8-10	14.3	8 to 10	3.6	2.4	1.3	1.1	0.0	53	47	0	7.1	2.5 to 3
GVS1703	7-8	11.2	8 to 10	3.7	2.6	1.4	1.2	0.0	55	45	0	7.3	2.5 to 3
CS-455AF	7-8	11.1	10 to 11	3.1	2.0	1.0	0.9	0.1	50	44	6	5.4	2.5 to 3
Portage	8-10	15	10 to 11	3.2	1.9	0.8	0.9	0.2	44	46	10	6.8	2.5 to 3
BSC905	7-9	11.4	7 to 10	3.3	2	0.9	1.1	0.1	43	52	5	8.4	2.75 to 3
GVS518	9-11	15	6 to 9	3.5	2.4	1.3	1.1	0	53	47	0	7.8	3.5 to 4
SV8112QH	10-13	14	9 to 12	2.7	1.8	1	0.8	0.1	54	42	4	7	3.25 to 3.75
Nitro	10-13	15.3	7 to 10	4.4	2.2	0.6	1.1	0.5	28	48	24	8.5	2.5 to 3
CS-494DAF	10-11	13.6	8 to 12	3.2	2.1	1.1	0.9	0.1	53	42	5	7.7	2.75 to 3
DA1470	10-12	16.1	11 to 14	3	2.1	1.2	0.8	0.1	58	39	3	6.8	3 to 3.5
BSC599	12-15	19.3	8 to 12	2.8	1.9	1.1	0.9	0	55	45	0	7.9	3 to 3.5
CS-464DAF	12-14	21.1	12 to 14	3.1	2	1.1	0.7	0.2	55	37	8	8.25	3 to 3.25
Ricco	10-13	16.1	7 to 9	3.1	2.1	1.1	1	0	52	48	0	7.3	3 to 3.5
BSC7120	10-13	21.1	10 to 12	2.7	1.9	1.1	0.6	0.1	61	34	5	7.3	2.5 to 3.5
98-326	12-13	19.5	10 to 14	5.2	2.7	0.8	1.4	0.6	28	51	21	8	2.25 to 2.75
SV0823QG	11-14	20.2	12 to 14	3.4	2.1	1.1	0.8	0.2	50	39	11	8	3
PLS196	12-13	18.7	8 to 10	3.1	2	0.9	1.1	0	43	57	0	8.4	3 to 3.5
Dancer	11-14	19.3	9 to 13	3.1	1.8	0.7	1	0.2	37	54	9	8.75	3 to 3.5
SV5685QF	17-20	21.5	10 to 12	3.5	2.2	1.1	0.9	0.2	50	39	11	8.5	3 to 4.5



## **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. Example – Variety X was harvested twice at tenderometer readings of 99 and 116. The afternoon of the second harvest (116 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).

**Height at Harvest** – Height was measured day of optimal harvest.

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

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

**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.

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

**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.

**Table 6. Maturity**

**Tenderometer unit measurement (Days after planting, gray area indicates prime harvest dates)**

	Day 46 1270 GDD 6/30	Day 47 1303 GDD 7/01	Day 48 1341 GDD 7/02	Day 49 1378 GDD 7/03	Day 50 1415 GDD 7/04	Day 51 1450 GDD 7/05	Day 52 1487 GDD 7/06	Day 53 1526 GDD 7/07	Day 54 1563 GDD 7/08	Day 55 1604 GDD 7/09	Day 56 1645 GDD 7/10	Day 57 1682 GDD 7/11	Day 58* 1717 GDD 7/12	Day 61* 1810 GDD 7/15	Day 62 1844 GDD 7/16
<b>Cultivar</b>															
Spring	118														
Eldorado	117	126													
Sherwood	125	149													
EXP461			94	104											
GVS1703			101	114											
CS-455AF			95	113											
Portage				95	113										
BSC905						104	130								
GVS518						100	113								
SV8112QH							108								
Nitro							97	108							
CS-494DAF								94	113						
DA 1470								95	108						
BSC599									129						
CS-464DAF										116					
Ricco								102	110						
BSC712									108	139					
98-326										106	122				
SV0823QG												128			
PLS196											92	110			
Dancer											88		112		
SV5685QG														89	105

\*Growing degree days (GDD) base 40F

\*Note gap between day 58 and day 61

**Table 7. Weather Summary and 110 Tenderometer Chart**

Day	day	Max. Temp.	Min. Temp.	Mean Temp.	Precip.	Acc Precip.	Degree days base 40	acc dd units base 40	Ten. Units	Corrigation factor for Yield
5/14/18	1	64	37	50	0.04	0.04	10	10	80	2.33
5/15/18	2	79	53	63	0.56	0.6	26	36	81	2.18
5/16/18	3	62	46	55	0	0.6	15	51	82	2.05
5/17/18	4	69	42	56	0.05	0.65	16	67	83	1.93
5/18/18	5	58	55	56	0.19	0.84	16	83	84	1.82
5/19/18	6	69	54	61	0	0.84	22	105	85	1.72
5/20/18	7	70	49	60	0	0.84	20	125	86	1.64
5/21/18	8	74	44	60	0	0.84	19	144	87	1.57
5/22/18	9	75	54	66	0	0.84	24	168	88	1.51
5/23/18	10	77	60	68	0.15	0.99	29	197	89	1.46
5/24/18	11	78	59	67	0	0.99	28	225	90	1.42
5/25/18	12	83	63	72	0	0.99	33	258	91	1.38
5/26/18	13	88	63	77	0	0.99	36	294	92	1.34
5/27/18	14	83	66	75	0	0.99	35	329	93	1.31
5/28/18	15	79	66	72	0.01	1	32	361	94	1.28
5/29/18	16	84	59	71	0.06	1.06	35	396	95	1.25
5/30/18	17	68	50	60	0	1.06	20	416	96	1.22
5/31/18	18	58	42	51	0	1.06	9	425	97	1.19
<b>Total Precipitation May ----&gt;</b>					<b>1.06 inches</b>		<b>425 GDD</b>	<b>425 GDD</b>		

**Table 7. Weather Summary and 110 Tenderometer Chart Continued**

Day	day	Max. Temp.	Min. Temp.	Mean Temp.	Precip.	Acc Precip.	Degree days base 40	acc dd units base 40	Ten. Units	Corrigation factor for Yield	
6/1/18	19	68	44	57	0	0	16	441	98	1.17	
6/2/18	20	67	57	62	0.11	0.11	22	463	99	1.15	
6/3/18	21	77	60	68	0.12	0.23	29	492	100	1.13	
6/4/18	22	86	60	72	0	0.23	33	525	101	1.11	
6/5/18	23	87	65	75	0.01	0.24	35	560	102	1.09	
6/6/18	24	77	60	71	0	0.24	30	590	103	1.07	
6/7/18	25	68	53	61	0	0.24	21	611	104	1.06	
6/8/18	26	75	48	63	0	0.24	21	632	105	1.05	
6/9/18	27	89	57	73	0	0.24	33	665	106	1.04	
6/10/18	28	90	65	78	0	0.24	38	703	107	1.03	
6/11/18	29	79	65	71	0.02	0.26	32	735	108	1.02	
6/12/18	30	70	51	63	0	0.26	21	756	109	1.01	
6/13/18	31	59	45	52	0	0.26	13	769	110	1.00	
6/14/18	32	66	41	54	0	0.26	13	782	111	0.99	
6/15/18	33	73	44	59	0	0.26	18	800	112	0.98	
6/16/18	34	78	47	64	0	0.26	23	823	113	0.97	
6/17/18	35	84	53	69	0	0.26	28	851	114	0.96	
6/18/18	36	85	58	71	0	0.26	32	883	115	0.96	
6/19/18	37	83	62	73	0	0.26	32	915	116	0.95	
6/20/18	38	87	62	75	0	0.26	35	950	117	0.95	
6/21/18	39	86	64	77	0	0.26	35	985	118	0.94	
6/22/18	40	89	67	77	0.35	0.61	38	1023	119	0.94	
6/23/18	41	86	66	74	0.03	0.64	36	1059	120	0.93	
6/24/18	42	75	61	68	0	0.64	28	1087	121	0.93	
6/25/18	43	77	59	67	0.22	0.86	27	1114	122	0.92	
6/26/18	44	81	62	72	0	0.86	32	1146	123	0.92	
6/27/18	45	78	61	70	0.3	1.16	29	1175	124	0.91	
6/28/18	46	79	67	73	0.28	1.44	33	1208	125	0.91	
6/29/18	47	82	65	73	0	1.44	33	1241	126	0.90	
6/30/18	48	74	64	68	0	1.44	29	1270	127	0.90	
<b>Total Precipitation June</b>					---->	<b>1.44 inches</b>		<b>845 GDD</b>	<b>1270 GDD</b>		

**Table 7. Weather Summary and 110 Tenderometer Chart**

Day	day	Max. Temp.	Min. Temp.	Mean Temp.	Precip.	Acc Precip.	Degree days base 40	acc dd units base 40	Ten. Units	Corrigation factor for Yield	
7/1/18	49	81	62	72	0	0	32	1302	128	0.89	
7/2/18	50	91	67	80	0	0	39	1341	129	0.89	
7/3/18	51	85	70	78	0	0	37	1378	130	0.89	
7/4/18	52	86	67	76	0.01	0.01	37	1415	131	0.88	
7/5/18	53	89	61	76	0	0.01	35	1450	132	0.88	
7/6/18	54	90	64	78	0	0.01	37	1487	133	0.88	
7/7/18	55	88	69	78	0	0.01	39	1526	134	0.87	
7/8/18	56	85	69	76	0.12	0.13	37	1563	135	0.87	
7/9/18	57	94	69	81	0	0.13	41	1604	136	0.87	
7/10/18	58	89	72	79	0.03	0.16	41	1645	137	0.86	
7/11/18	59	85	70	74	1.14	1.3	37	1682	138	0.86	
7/12/18	60	82	68	74	0	1.3	35	1717	139	0.86	
7/13/18	61	75	64	69	0.18	1.48	29	1746	140	0.86	
7/14/18	62	80	63	70	0	1.48	31	1777	141	0.85	
7/15/18	63	85	60	73	0	1.48	33	1810	142	0.85	
7/16/18	64	79	69	72	0.99	2.47	34	1844	143	0.85	
<b>Total Precipitation July</b>					---->	<b>2.47 inches</b>		<b>574 GDD</b>	<b>1844 GDD</b>		

## ***Descriptions Provided by the Seed Source***

***Spring*** – *Seminis, normal leaf, 1050 heat units, 4.5 average sieve size, 9 nodes to flower, 1-2 pods per plant, 6-7 berries per pod, 16 inch plant height, resistance to Fusarium wilt race 1.*

***Eldorado*** – *Pure Line, normal leaf type, 3.8 sieve size, -1 days to maturity relative to Spring, 1100 heat units, resistant to Fusarium race 1 and powdery mildew.*

***Sherwood*** – *Seminis, normal leaf, 1160 heat units, 3.3 sieve size, IR: PV, HR: BYMV/FOP:1*

***EXP 461*** – *Brotherton, afila leaf type, 1260 heat units, 59 days to maturity, 3.5 average sieve size.*

***GVS1703*** – *Gallatin Valley, heat units 1230*

***CS-455AF*** – *Crites, 1270 heat units to maturity, afila leaf type, disease resistance: Fop 1, Pv+, 2 days earlier than Portage, good root system.*

***Portage*** – *Crites, midseason maturity, 60 days to maturity or approximately 1325 heat units (+ 2 days relative to Tomahawk), afila leaf type, 18 inch plant height, 10 nodes to first bloom, 2-3 pods per node, 7-8 peas per pod, 3.7 sieve size index, resistant to fusarium wilt race 1.*

***BSC905*** – *Brotherton, normal leaf, 1370 Heat Units, 65 days to maturity, 1.3 sieve size*

***GVS 518*** – *Gallatin Valley, Mid-season Afila type, 67 days to maturity, 1350 heat units, 12-13 nodes to first flower, plant height 25", avg. 2 pods per node, avg. sieve size is 3.8, pointed pod shape.*

***SV8112QH*** – *Seminis, Sweet Savor gene type, Determinate afila leaf type, Sweet Savor gene type, 1430 heat units, Similar maturity as Reliance but Reliance not sweet savor, 3.1 average sieve size, good disease package.*

***Nitro*** – *Seminis, 1370 heat units, normal leaf, 2 sieve size, HR: BYMV/FOP*

***494DAF*** – *Brotherton, afila leaf type, 1590 heat units, 71 days to maturity, 2.8 average sieve size, small sieve size class.*

***DA 1470 (EX08540794)*** – *Seminis, 1470 heat units, determinate afila type, 3.2 average sieve size, 2-3 pods per node, 8-9 berries per pod, 18 inch plant height, HR for Fusarium R1 and bean yellow mosaic virus. 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.*

***BSC599*** – *Brotherton, afila leaf type, 1630 heat units, 73 days to maturity, 4.1 average sieve size.*

***CS-464AF*** – *Crites, 1475 heat units to maturity, disease resistance: Fop 1&2, Ep, PEMV, afila type leaf, triple pods, main-season, disease package.*

***Ricco*** – *Gallatin Valley, Main season variety 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.*

***BSC7120*** – *Brotherton, 1500 heat units, afila leaf type, 68 days to maturity, 4.2 average sieve size.*

## ***Descriptions provided by the seed source continued:***

**98-326** – Pure Line, afila leaf type, 2.8 sieve size, +16 days to maturity relative to Spring, 1400 heat units, resistant to Fusarium wilt race 1, powdery mildew, and pea enation mosaic virus.

**SV0823QG** – Seminis, 1525 heat units, afila plant type, 3.3 average sieve size, 17 nodes to first flower, 2-3 pods per node, 8-9 berries per pod, 45 cm plant height, 2600 seeds per pound, Ir for Downy Mildew and HR for Powdery Mildew, Fusarium R1 and Pea Enation mosaic virus..

**PLS196** – Pure Line, afila, +13 days to maturity relative to Spring, 1580 heat units, 4.0 sieve, resistance to FWr1,2, Fus.RR, PM, tolerant: Downy Mildew.

**Dancer** – Pure Line, afila leaf type, +14 days to maturity relative to Spring, 1460 heat units, 3.5 sieve size, resistance to FWr1, PM, and PEMV, tolerant to DM.

**SV5685QG** – Seminis, 1750 heat units, normal leaf.

## **- 2020 Annual Cutting -**

A socially distanced, vegetable “cutting”, is planned for November 19<sup>th</sup>, where frozen peas, snap beans, and sweet corn will be put on display for processors and seed companies to evaluate. Large and 3-4 sieve snap beans were canned and will also be 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.