

NEW YORK STATE 2016 PROCESSING PEA CULTIVAR TRIAL REPORT

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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** - 4/28. Picking started on 6/20 and we finished on 7/7. **Herbicide** - Dual post plant 4/28. **Plot Size:** 7 rows by 30 ft. **Row Width:** 6 inches, Row length: 30 ft. **In-row Spacing:** 1425 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 11/5 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 decent to a bit dry when planting. Night temperatures were low 30s. Plants were slow to emerge but did so uniformly. Stands were good to very good. Growing conditions were good although on the dry side. One inch of irrigation was made on 6/17 and 6/27. High temperatures moved the later peas. Yields were lower than some years due to less than optimum moisture and ranged from 3200 lbs per acre to 8300 lbs per acre. 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.

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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. My thanks to team members Alison Mahoney, Zach Hemminger, Karen Luong, Callie Musto and Misty Hotelling and for their assistance in day to day operations.

Special thanks to Gilbert Scott and Helen Terra who sampled and made it possible for us to harvest at the most optimum tenderometer reading. They are 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
Tomahawk (cs430)	1105	Crites	afila	maxim & apronXL	2526	96	3.5	
Spring (std)	1155	Seminis	Normal	A,C	1923	99	3.9	9 to 10
BSC2014	1160	Brotherton	Normal	maxim+apronXL	0	93		
FP 2269	1190	Gallatin Valley	afila	Maxim4FS, ApronXL,Cruiser5FS		97	3.9	9 to 10
GV435	1200	GV	afila	Maxim4FS, ApronXL,Cruiser5FS	2136	86	3.5	10
BSC3048	1205	Brotherton	afila	maxim+apronXL	0	97		
BSC15L11	1230	Brotherton	Normal	maxim+apronXL	0	85		
Austin	1250	GV	afila	Maxim4FS, ApronXL,Cruiser5FS	2107	92	3.2	12
Portage (std)	1305	Crites	afila	maxim & apronXL	2181	96	3.8	10
SV1391QH	1320	Seminis	DetA	A,C	0	89	3.3	
LIL Mo	1320	Seminis	Normal	A,C	0	95	2.6	10 to 11
PLS 14	1330	Pureline	Normal	Maxim/Apron XL	2528	92	3.7	9
SV7401QH	1340	Seminis	DetA	A,C	0	99	3.2	
SV0935QH	1340	Seminis	DetA	A,C	0	97	3.1	
11P42	1340	Pureline	afila	Maxim/Apron XL	2381	89		
GVS 518	1350	GV	afila	Maxim4FS, ApronXL,Cruiser5FS	2804	91	3.8	
GV410	1360	GV	afila	Maxim4FS, ApronXL,Cruiser5FS	2717	92		
CS-424F	1365	Çrites	Normal	maxim & apronXL	2008	96	4	
GVS490	1380	GV	Normal	Maxim4FS, ApronXL,Cruiser5FS	2324	95	3.8	
BSC15L21	1390	Brotherton	afila	maxim+apronXL	0	80		
CS-437F	1405	Çrites	Normal	maxim & apronXL	2265	97	3.8	
Reliance	1420	Seminis	DetA	A,C	0	99	3.2	
SV8112QH	1430	Seminis	DetA	A,C	0	98	3.1	
CS-439AF	1440	Çrites	afila	maxim & apronXL	3803	96	2.5	
Iona	1450	Pureline	Normal	Maxim/Apron XL	3476	96	2.4	
586-3	1450	Pureline	afila	Maxim/Apron XL	1827	96		
ASR4249	750c	Storm	Normal	Thiram	0	92	3.4	13
Lochsa	1460	Crites	afila	maxim & apronXL	2322	99	3.7	15

Table 2 continued - Cultivar List and Maturity From Seed Source

Cultivar	HU	Seed Source	Leaf Type	Seed Treatment	Seed Count/lb	Germ. %	Sieve Size	Nodes to Flower
CS-440AF	1465	Crites	afila	maxim & apronXL	2395	94	3.4	
Da 1470	1470	Seminis	DetA	A,C	0	95	3.2	
SV0371QF	1480	Seminis	afila	A,C	0	99		
Welland (CMG-419)	1480	Crites	afila	maxim & apronXL	3352	98	2.7	
BL2404	1490?	Colombia Seed	afila	Vibrance Max	0	99		14-15
Duplicate 2404	1490?	Colombia Seed	afila	Vibrance Max	0	93		15-16
FP2278	1500	GV	afila	Maxim4FS, ApronXL,Cruiser5FS	2896	94	3.6	15
PLS 179	1500	Pureline	afila	Maxim/Apron XL	2498	91		
Bolero std	1510	Pureline	Normal	Maxim/Apron XL	2364	98	3.8	14-15
SV7688QF	1520	Seminis	DetA	A,C	0	95	3.2	
PLS 595	1520	Pureline	afila	Maxim/Apron XL	2291	95		13
251	1520	Pureline	afila	Maxim/Apron XL	2639	88		
Trinity (435)	1520	Crites	afila	maxim & apronXL	2842	96	3.6	
SV40893QF	1525	Seminis	Normal	A,C	0	90	3.5	
SV1036QF	1525	Seminis	afila	A,C	0	97	3.8	
Ricco(std)	1530	Gallatin Valley	afila	Maxim4FS, ApronXL,Cruiser5FS	2265	98	3.7	15
BL415	1540??	Colombia Seed	Normal	Vibrance Max	0	97		
Naches	1550	Crites	afila	maxim & apronXL	2466	96	3.8	
513	1550	GV	normal	Maxim4FS, ApronXL,Cruiser5FS	2340	96	4	15
522	1560	GV	afila	Maxim4FS, ApronXL,Cruiser5FS	2217	83	4	14-15
613-1	1580	Pureline	afila	Maxim/Apron XL	2552	98		
BL2418	1600??	Colombia Seed	afila	Vibrance Max	0	86		
GV506	1560	GV	afila	Maxim4FS, ApronXL,Cruiser5FS	2236	94		
PLS 183	1640	Pureline	afila	Maxim/Apron XL	1978	92		
GV 555	1650	GV	afila	Maxim4FS, ApronXL,Cruiser5FS	3226	97	3.2	15-16

Table 3. Plant Characteristics

Cultivar	Plant Stand Rating	Heat Units to full flower	Root Rot Rating	Plant Habit Rating (at Harvest) 1-5 (best)	Determinate rating	Overall Rating	Root Rot Rating (Leroy)
Tomahawk	4	780	3.5	3.5	3.25	3	na
Spring	4	761	2.5	2.25	3.5	3	na
FP 2269	4	744	2.5	3	4	3	na
BSC2014	4.5	811	3	3	3.25	3.5	na
PLS 14	4	887	3.25	3.5	4	3.5	na
11P42	4.25	912	3.5	3.5	3.25	3.5	na
GV435	4	780	3	2.25	4	3	na
Austin	4.25	780	2	2.5	4	2.5	na
BSC3048	4	912	3.75	3.5	3.5	3.5	na
LIL Mo	4	1004	3	3.5	3.5	3.25	na
SV7401QH	4	887	2.75	3	4	3.25	na
Portage	4.25	887	4	3.5	3.75	3.5	na
GV410	4.25	887	3.25	3	4	3	na
CS-424F	4	860	2.75	2.5	4	3	na
SV8112QH	4	912	3.5	4	4	4	na
SV1391QH	4	912	3.5	4	4	3.75	na
GVS 518	4.25	887	3	2.5	4	3	na
SV0935QH	4	940	3	4	3.75	3	na
GVS490	4.5	860	2.5	2.5	4	2.75	na
Reliance	4	940	3.5	4	4	4	na
586-3	4	912	2.75	3	3.75	3.5	na
ASR4249	4	912	2	2.5	4	3	na
CS-437F	4.25	1004	3.25	3	3.75	3.25	na
BSC15L11	3.75	1064	3.5	3.25	3.5	3.5	na
Ricco(std)	4.5	940	2.75	2.25	4	3	na
SV0371QF	4	1038	4	3.75	3.5	3.75	na
613-1	4.5	1038	3.5	3.5	3.5	3.5	na
SV1036QF	4.25	1038	3.5	3.25	3.5	3.25	na
BL415	4	1109	3.5	3	3.5	3.5	na
GV506	4.5	1038	3.75	4	3.5	3.5	na
GV 555	4.25	1004	3.5	3.25	3.5	3.5	na
BSC15L21	4.5	1087	4	3.5	3.5	3.25	na
Bolero std	4.25	1004	3	2.75	4	3	na
251	3.5	1087	3.25	3.25	3.75	3	na

Table 3 continued:

Cultivar	Plant Stand Rating	Heat Units to full flower	Root Rot Rating	Habit Rating (at Harvest) 1-5 (best)	Determinate rating	Overall Rating	Root Rot Rating (Leroy)
CS-440AF	4	1004	3.5	3	3.75	3.75	na
522	4.25	1064	3.5	3.75	2.5	3.75	na
Da 1470	3.75	1004	3.5	3.5	4	3.75	na
BL2404	4	1004	4	3.5	3.5	3.75	na
Duplicate 2404	4.25	1004	4	3.75	3.75	4	na
513	3.75	1087	2.5	2.75	4	2.75	na
FP2278	4	1038	3.75	3.5	4	3.5	na
CS-439AF	3.75	1109	3.75	3.75	3.5	3.5	na
Iona	3.75	1109	2.5	2	4	3	na
Lochsa	4	1038	3	3	3.75	3	na
Welland	4	1038	3.5	3.5	3.75	3.5	na
SV7688QF	3.5	1038	3.5	4	3.5	3.25	na
PLS 595	4	1004	3.25	3.5	3.5	3.5	na
SV40893QF	4	1087	3	3.25	3.75	3.5	na
PLS 179	4.25	1087	3.5	3.5	3	3.75	na
Trinity	3.75	1038	3.5	3.5	3.5	3.5	na
BL2418	4	1087	3.5	4	3.5	3.5	na
Naches	4	1038	3	3	3.5	3.25	na
PLS 183	4.5	1038	3.5	2.75	4	3.75	na

Plant Stand - A rating a few weeks after planting. 1=poor, 5 = excellent

Heat Units to full flower (base 40 degrees)

Root Rot Rating on evaluation trial - 1 = dead, 5 = completely healthy

Ratings were done on 6/18 and at harvest. The two ratings were averaged.

Plant Habit - Rating of how well the plants stood at harvest. 1= flat on ground, 10 very erect

Ratings were done on 6/18 and at harvest. The two ratings were averaged.

Determinate vs indeterminate - Very indeterminate = 1, very determinate=10

Ratings were done on 6/18 and at harvest. The two ratings were averaged.

Overall rating - 1-5 scale with 5 being best. (plant std, habit, overall health, yield potential)

Ratings were done on 6/18 and at harvest. The two ratings were averaged.

4+ to 5 = Best, 4 = very good, 3.5 = worthy of continued evaluation.

Root Rot Rating - A separate planting (three replications) was made in an infested field (Leroy NY). Same rating system.

Emergence was poor due to lack of rainfall and no data was obtained.

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	Adjusted Yield Based on 110 TU	Plants per A (1000)	Plts. per foot
Tomahawk	54	1004	1034	6	8	31	37	16	1	3.5	85	3536	3956	6081	426	4.9
Tomahawk	55	1038	1055	4	8	29	39	17	0	3.6	91	4142	4384	5716	433	5.0
Tomahawk	57	1087	1042	1	4	13	37	42	3	4.3	123	5176	4542	4762	441	5.1
Spring	54	1004	1020	4	5	22	37	29	2	3.9	92	3779	4003	5064	474	5.4
Spring	55	1038	1045	1	3	12	37	38	8	4.3	96	4345	4448	5301	456	5.2
Spring	56	1064	1053	1	2	5	27	49	16	4.7	106	4752	4593	4942	470	5.4
FP 2269	56	1064	1058	1	1	7	29	44	17	4.7	103	4857	4773	5197	464	5.3
FP 2269	57	1087	1041	0	1	5	20	50	23	4.9	123	4955	4311	4559	496	5.7
BSC2014	58	1109	1097	2	8	30	47	12	1	3.6	106	7057	6889	7339	668	7.7
BSC2014	59	1135	1081	2	7	28	51	11	0	3.7	127	8839	8083	7955	636	7.3
PLS 14	58	1109	1128	3	7	26	49	12	0	3.6	90	5445	5716	7732	435	5.0
PLS 14	59	1135	1132	2	5	21	56	15	1	3.8	101	6095	6057	6765	407	4.7
PLS 14	60	1169	1124	0	3	12	57	26	1	4.1	123	6211	5576	5714	410	4.7
11P42	58	1109	1122	4	9	18	40	23	3	3.8	94	5997	6174	7676	459	5.3
11P42	59	1135	1132	3	8	19	54	14	0	3.7	102	6316	6270	6885	416	4.8
11P42	60	1169	1131	2	6	19	41	29	1	3.9	119	7126	6594	6698	495	5.7
GV435	59	1135	1122	1	3	16	49	33	1	4.1	106	5518	5340	5738	433	5.0
GV435	60	1169	1122	0	1	11	46	40	1	4.3	124	6080	5418	5533	418	4.8
Austin	59	1135	1147	1	3	10	45	37	4	4.3	94	6164	6332	7890	489	5.6
Austin	60	1169	1124	0	1	7	36	53	2	4.5	123	6294	5660	5791	472	5.4
BSC3048	59	1135	1147	5	17	40	31	3	0	3.1	94	5746	5914	7355	444	5.1
BSC3048	60	1169	1167	5	12	37	40	4	0	3.3	101	6345	6317	7043	379	4.4
BSC3048	61	1207	1150	2	6	31	53	7	0	3.6	129	7373	6570	6562	371	4.3
LIL Mo	60	1169	1171	11	30	41	13	2	0	2.6	99	5387	5415	6195	416	4.8
LIL Mo	61	1207	1158	3	14	55	24	2	0	3.1	124	6723	6041	6118	479	5.5
SV7401QH	61	1207	1215	5	18	49	25	1	0	3.0	96	4683	4795	5713	469	5.4
SV7401QH	62	1242	1201	2	11	43	36	5	1	3.3	120	5064	4495	4709	450	5.2

Table 4 continued next page:

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	Adjusted Yield Based on 110 TU	Plants per A (1000)	Plts. per foot
Portage	60	1169	1185	2	9	33	36	17	1	3.6	92	6639	6863	8897	458	5.3
Portage	61	1207	1208	1	4	21	47	25	1	3.9	100	6897	6906	7794	499	5.7
Portage	62	1242	1161	0	2	8	28	50	10	4.6	141	7271	6132	6180	513	5.9
GV410	62	1242	1205	0	3	18	45	30	3	4.1	118	6182	5669	5811	423	4.9
GV410	63	1271	1191	0	2	9	27	41	18	4.7	140	5721	4601	4920	391	4.5
CS-424F	61	1207	1227	1	4	23	55	16	0	3.8	90	7554	7834	10727	492	5.6
CS-424F	62	1242	1211	0	2	12	52	31	2	4.2	115	6868	6439	6593	432	5.0
SV8112QH	62	1242	1205	1	6	33	47	12	0	3.6	119	5833	5311	5483	455	5.2
SV8112QH	63	1271	1211	1	4	28	53	13	0	3.7	130	6127	5287	5453	421	4.8
SV1391QH	61	1207	1218	2	7	32	51	6	0	3.5	94	5013	5172	6417	419	4.8
SV1391QH	62	1242	1227	2	4	23	49	20	1	3.9	108	5104	4889	5206	384	4.4
SV1391QH	63	1271	1239	2	3	15	54	24	1	4.0	116	5637	5189	5356	388	4.5
GVS 518	61	1207	1228	2	5	28	49	14	0	3.7	89	6632	6931	9683	470	5.4
GVS 518	62	1242	1231	1	3	15	52	25	2	4.1	105	6647	6497	6979	416	4.8
GVS 518	63	1271	1241	1	2	12	53	30	1	4.2	115	6541	6121	6280	373	4.3
SV0935QH	62	1242	1257	4	16	38	33	6	0	3.2	93	4352	4558	5702	460	5.3
SV0935QH	63	1271	1245	2	7	33	43	12	1	3.6	113	5267	4903	5109	527	6.0
SV0935QH	66	1348	1245	1	3	18	50	27	1	4.0	152	6273	4826	5206	468	5.4
GVS490	62	1242	1235	0	1	7	41	44	5	4.5	104	8817	8715	9346	484	5.6
GVS490	63	1271	1248	0	1	4	40	51	2	4.5	111	7460	7142	7385	462	5.3
Reliance	62	1242	1240	2	8	40	42	6	0	3.4	101	6679	6651	7414	505	5.8
Reliance	63	1271	1267	1	4	27	59	9	0	3.7	102	6581	6525	7173	477	5.5
Reliance	64	1295	1241	1	3	19	49	25	1	4.0	127	6919	6163	6227	505	5.8
586-3	64	1295	1245	0	2	12	53	32	0	4.2	125	6748	6048	6141	564	6.5
ASR4249	62	1242	1207	1	4	24	50	20	0	3.9	117	5416	4931	5145	490	5.6
ASR4249	63	1271	1238	1	3	15	49	31	1	4.1	116	5855	5398	5562	441	5.1
CS-437F	63	1271	1262	1	2	14	49	29	4	4.1	104	6614	6493	7011	470	5.4
CS-437F	64	1295	1272	1	2	11	45	38	2	4.2	112	6821	6494	6684	467	5.4
BSC15L11	63	1271	1278	15	35	41	3	0	0	2.3	97	6541	6635	7784	509	5.8
BSC15L11	64	1295	1267	10	33	48	5	0	0	2.5	114	7402	7010	7106	512	5.9
Ricco	63	1271	1265	1	2	11	53	32	1	4.2	103	7191	7107	7694	544	6.2
Ricco	64	1295	1280	0	2	9	45	41	2	4.3	108	7304	7089	7450	515	5.9

Table 4 continued:

Cultivar	Days to harv	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	Adjusted Yield Based on 110 TU	Plants per A (1000)	Plts. per foot
SV0371QF	64	1295	1278	5	17	36	39	3	0	3.2	108	7049	6816	7190	488	5.6
SV0371QF	65	1322	1284	3	12	37	43	3	0	3.3	119	6788	6256	6381	400	4.6
613-1	64	1295	1290	6	15	46	30	1	0	3.1	102	6639	6574	7237	460	5.3
613-1	65	1322	1283	2	9	40	47	2	0	3.4	119	7452	6911	7005	449	5.2
SV1036QF	64	1295	1327	1	4	17	44	33	1	4.1	84	5931	6379	10795	524	6.0
SV1036QF	66	1348	1320	0	1	5	29	54	9	4.7	114	5539	5147	5318	428	4.9
BL415	64	1295	1314	3	8	27	40	19	1	3.7	90	6066	6336	8613	537	6.2
BL415	65	1322	1332	2	7	24	44	20	1	3.8	95	6581	6721	8226	408	4.7
BL415	67	1375	1322	1	2	10	40	40	6	4.4	126	7710	6973	6939	378	4.3
GV506	64	1295	1299	3	9	29	45	12	0	3.5	98	5398	5454	6315	504	5.8
GV506	65	1322	1309	3	6	24	55	12	0	3.7	107	5547	5360	5713	431	5.0
GV 555	64	1295	1314	3	14	39	39	3	0	3.3	91	6040	6302	8336	520	6.0
GV 555	65	1322	1317	1	8	35	50	6	0	3.5	103	6719	6644	7189	452	5.2
BSC15L21	65	1322	1317	6	22	45	22	1	0	2.9	102	7235	7169	7886	533	6.1
Bolero	65	1322	1319	1	3	14	40	38	2	4.2	102	6204	6157	6762	386	4.4
251	65	1322	1334	4	9	28	40	15	0	3.5	94	4697	4865	6012	344	4.0
251	66	1348	1301	2	5	19	44	27	1	4.0	123	4861	4207	4472	385	4.4
CS-440AF	66	1348	1312	0	2	15	59	22	0	4.0	118	8581	8077	8066	563	6.5
522	66	1348	1317	1	3	12	37	41	5	4.3	116	6828	6389	6487	470	5.4
Da 1470	66	1348	1326	1	2	12	49	35	0	4.2	111	6915	6607	6846	366	4.2
BL2404	66	1348	1347	1	3	12	37	41	6	4.3	101	6977	6958	7744	475	5.4
BL2404	67	1375	1322	1	2	9	27	52	7	4.5	127	7805	7058	7024	476	5.5
Duplicate 2404	66	1348	1351	0	2	12	41	40	3	4.3	98	7569	7615	8855	534	6.1
Duplicate 2404	67	1375	1300	1	1	6	23	58	11	4.7	138	7732	6677	6649	481	5.5
513	68	1402	1310	0	2	9	29	51	7	4.5	146	5953.2	4665	5001	324	3.7

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	Adjusted Yield Based on 110 TU	Plants per A (1000)	Plts. per foot
FP2278	66	1348	1329	1	4	15	39	38	3	4.2	109	6716	6454	6783	391	4.5
CS-439AF	67	1375	1360	8	27	48	15	1	0	2.7	107	5267	5062	5425	438	5.0
CS-439AF	69	1436	1319	6	18	52	20	2	0	3.0	158	5144	3510	4269	409	4.7
Iona	67	1375	1348	3	9	34	47	6	0	3.4	113	7122	6749	6908	470	5.4
Iona	68	1402	1303	1	5	26	56	12	0	3.7	149	6788	5407	5702	390	4.5
Lochsa	67	1375	1348	1	3	12	41	32	9	4.3	114	6323	5941	6071	421	4.8
Lochsa	68	1402	1321	1	2	7	34	48	7	4.5	140	6294	5165	5413	430	4.9
Welland	67	1375	1351	2	9	30	45	12	0	3.6	112	6806	6470	6670	419	4.8
Welland	69	1436	1288	1	4	29	47	17	1	3.8	174	6316	4244	5242	419	4.8
SV7688QF	67	1375	1355	1	3	23	51	19	2	3.9	110	4167	3887	4167	420	4.8
SV7688QF	69	1436	1277	0	2	11	36	34	14	4.5	180	4109	1878	3411	405	4.6
PLS 595	67	1375	1358	0	1	8	40	48	1	4.4	108	7343	7110	7490	344	4.0
PLS 595	69	1436	1301	0	1	3	27	65	3	4.7	168	7140	5246	5926	384	4.4
SV40893QF	67	1375	1382	1	2	10	48	39	1	4.3	96	7333	7435	8946	484	5.6
SV40893QF	68	1402	1373	1	1	6	43	46	1	4.4	115	6516	6105	6255	453	5.2
PLS 179	68	1402	1396	1	2	10	44	38	3	4.3	103	6734	6650	7205	389	4.5
PLS 179	69	1436	1345	0	2	5	31	53	7	4.6	145	6501	5232	5526	401	4.6
Trinity	68	1402	1390	1	2	11	42	42	1	4.3	106	6726	6558	6995	492	5.6
Trinity	69	1436	1359	0	2	8	44	43	2	4.3	139	6534	5451	5619	417	4.8
BL2418	68	1402	1381	1	2	12	37	41	6	4.3	110	5725	5435	5725	404	4.6
BL2418	69	1436	1371	1	2	6	29	48	13	4.6	132	6552	5647	5766	376	4.3
Naches	68	1402	1407	1	4	15	41	34	4	4.1	97	6106	6180	7266	429	4.9
Naches	69	1436	1378	1	2	10	26	47	14	4.6	129	6418	5606	5712	391	4.5
PLS 183	68	1402	1400	1	2	8	25	46	17	4.7	101	6418	6390	7124	402	4.6
PLS 183	69	1436	1385	1	2	5	21	51	18	4.8	126	6621	5902	5959	424	4.9

Heading explanations on page 11.

Adjusted yield conversion 110 TU chart page ?

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 Texturegagge 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	# Nodes with Pods/plt.	Wt. Of plants & pods (lb)	Wt. of plants (lb)	Wt. of pods (lb)	Pods per plant	# of Single pods/node	# of Double pods/node	# Triple pods/node	# of Quad. Pods/node	% of Single pods/node	% of Double pods/node	% of Triple pods/node	% of Quad. pods/node	Pod length (cm)	Berries per pod
Tomahawk	9 to 10	2.4	1.30	0.53	0.77	3.2	1.6	0.8	0.0	0.0	48	52	0	0	7 to 8	6 to 8
Spring	6 to 8	2.2	1.12	0.36	0.77	2.8	1.6	0.6	0.0	0.0	58	42	0	0	7	6 to 7
FP 2269	6 to 8	2.0	1.18	0.34	0.84	2.8	1.2	0.8	0.0	0.0	44	56	0	0	7 to 8	5 to 8
BSC2014	9 to 10	2.1	1.02	0.43	0.60	3.6	0.6	1.5	0.0	0.0	17	83	0	0	6 to 7	4 to 5
PLS 14	8 to 9	2.1	1.14	0.27	0.87	3.5	0.6	1.4	0.0	0.0	18	82	0	0	6 to 8	5 to 7
11P42	9 to 11	2.1	1.38	0.62	0.76	3.5	0.8	1.3	0.1	0.0	22	73	6	0	6 to 8	5 to 7
GV435	11 to 12	2.0	1.24	0.40	0.84	3.3	0.7	1.3	0.0	0.0	20	80	0	0	8 to 9	5 to 8
Austin	9 to 12	1.9	1.43	0.53	0.90	3.4	0.6	1.3	0.1	0.0	16	75	9	0	7 to 9	6
BSC3048	7 to 10	3.2	1.75	0.73	1.02	5.2	1.2	2.0	0.0	0.0	23	77	0	0	6 to 8	4 to 8
LIL Mo	10 to 12	2.3	1.00	0.35	0.65	4.1	0.5	1.8	0.0	0.0	11	87	2	0	6 to 7	5 to 8
SV7401QH	12 to 13	2.0	1.14	0.47	0.67	3.3	0.7	1.2	0.1	0.0	22	72	6	0	7 to 8	6 to 8
Portage	10 to 14	2.2	1.44	0.60	0.85	4.4	0.5	1.2	0.5	0.0	12	55	33	0	6 to 8	4 to 7
GV410	10 to 12	2.3	1.56	0.56	1.00	3.8	0.8	1.5	0.0	0.0	21	79	0	0	9 to 10	6 to 7
CS-424F	9 to 11	2.2	1.81	0.78	1.04	4.4	0.6	0.9	0.7	0.0	14	39	47	0	6 to 8	5 to 8
SV8112QH	12 to 14	2.3	1.40	0.55	0.85	4.0	0.9	1.3	0.2	0.0	23	64	13	0	7	6 to 7
SV1391QH	10 to 12	2.3	1.27	0.52	0.75	3.4	1.2	0.9	0.1	0.0	36	52	12	0	7	5 to 7
GVS 518	11 to 13	2.2	1.15	0.25	0.90	3.6	0.9	1.3	0.0	0.0	26	74	0	0	7 to 9	6 to 7
SV0935QH	11 to 13	2.2	1.04	0.43	0.61	3.4	1.0	1.1	0.1	0.0	30	64	6	0	6 to 7	5 to 8
GVS490	11 to 12	2.1	1.60	0.49	1.11	3.8	0.4	1.7	0.0	0.0	12	88	0	0	7 to 10	5 to 8
Reliance	11 to 13	2.5	0.90	0.38	0.52	3.7	1.4	1.0	0.1	0.0	38	52	6	4	6 to 8	6 to 9
586-3	9 to 13	1.9	1.37	0.64	0.74	3.1	0.8	0.9	0.2	0.0	26	58	17	0	7 to 9	6 to 8
ASR4249	10 to 13	1.7	1.08	0.40	0.68	3.2	0.4	1.0	0.2	0.0	13	65	23	0	5 to 7	5 to 8
CS-437F	11 to 12	2.2	2.02	0.92	1.10	4.2	0.6	1.1	0.4	0.0	14	54	32	0	7 to 8	6 to 9
BSC15L11	11 to 13	2.4	1.01	0.44	0.58	4.5	0.7	0.7	0.0	0.0	22	32	46	0	5 to 7	7 to 9
Ricco	12 to 16	1.8	1.76	0.81	0.96	2.9	0.7	1.1	0.0	0.0	24	76	0	0	6 to 9	5 to 8
SV0371QF	11 to 14	2.1	1.47	0.72	0.75	4.1	0.5	1.2	0.4	0.0	13	59	28	0	5 to 7	7 to 9
613-1	11 to 16	2.8	2.12	0.97	1.15	4.6	0.9	1.9	0.0	0.0	19	81	0	0	6 to 9	7 to 9

Table 5 continued:																
Cultivar	Node to first flower	# Nodes with Pods/plt.	Wt. Of plants & pods (lb)	Wt. of plants (lb)	Wt. of pods (lb)	Pods per plant	# of Single pods/node	# of Double pods/node	# Triple pods/node	# of Quad. Pods /node	% of Single pods/node	% of Double pods/node	% of Triple pods/node	% of Quad. pods/node	Pod length (cm)	Berries per pod
SV1036QF	13 to 15	2.4	1.99	0.99	1.00	3.9	1.1	1.1	0.2	0.0	28	59	13	0	6 to 9	7 to 8
BL415	10 to 15	2.6	3.02	1.49	1.53	4.8	0.9	1.2	0.4	0.0	20	52	28	0	7 to 8	8 to 9
GV506	13 to 16	1.9	1.96	0.96	1.00	3.4	0.7	1.0	0.2	0.0	20	61	18	0	7 to 8	7 to 9
GV 555	14 to 16	2.8	2.02	0.91	1.11	4.8	0.8	2.0	0.0	0.0	17	83	0	0	7 to 8	7 to 8
BSC15L21	11 to 14	2.1	1.72	0.84	0.88	4.7	0.7	0.6	0.6	0.2	15	25	40	21	5 to 7	6 to 9
Bolero std	10 to 13	1.6	1.53	0.80	0.73	2.5	0.8	0.6	0.2	0.0	30	49	21	0	6 to 7	6 to 8
251	12 to 16	2.4	2.11	1.20	0.91	3.6	1.2	1.2	0.0	0.0	33	67	0	0	7 to 9	8 to 10
CS-440AF	11 to 13	2.0	1.07	0.45	0.62	3.6	0.6	1.2	0.2	0.0	16	69	14	0	6 to 8	6 to 9
522	13 to 15	2.2	2.09	0.95	1.14	3.8	0.9	1.2	0.1	0.0	24	62	11	4	7 to 9	6 to 9
Da 1470	10 to 13	2.6	1.10	0.37	0.73	4.1	1.3	1.1	0.2	0.0	32	55	13	0	5 to 8	5 to 7
BL2404	14 to 15	2.4	1.96	1.00	0.96	3.6	1.3	1.1	0.0	0.0	36	64	0	0	6 to 8	6 to 8
Duplicate 2404	14 to 16	1.9	1.53	0.82	0.72	2.8	1.0	0.9	0.0	0.0	36	64	0	0	6 to 9	6 to 8
513	12 to 13	2.4	1.95	0.89	1.06	4.3	0.8	1.6	0.1	0.0	18	73	10	0	6 to 9	4 to 9
FP2278	11 to 14	2.6	1.96	0.78	1.18	4.4	0.8	1.7	0.1	0.0	18	75	7	0	6 to 8	7 to 9
CS-439AF	12 to 15	2.2	1.11	0.61	0.50	3.9	1.0	1.0	0.3	0.0	25	50	21	4	5 to 7	6 to 10
Iona	12 to 14	2.3	1.01	0.37	0.64	4.3	0.7	1.1	0.5	0.0	16	51	33	0	6 to 7	8 to 9
Lochsa	13 to 14	1.9	1.00	0.39	0.61	2.8	1.0	0.9	0.0	0.0	34	66	0	0	7 to 8	7 to 9
Welland	14 to 15	2.3	1.40	0.64	0.76	3.7	1.2	0.6	0.4	0.0	33	33	33	0	6 to 8	6 to 8
SV7688QF	15 to 17	2.2	2.06	1.62	0.45	4.0	0.8	1.1	0.3	0.0	19	55	23	3	7 to 8	6 to 9
PLS 595	15 to 16	1.8	1.41	0.65	0.76	2.7	0.8	0.9	0.0	0.0	30	66	4	0	7 to 10	6 to 9
SV40893QF	14 to 16	2.0	1.53	0.67	0.86	3.8	0.6	1.2	0.3	0.0	14	61	24	0	6 to 8	5 to 9
PLS 179	12 to 15	2.6	1.83	0.80	1.04	3.9	1.3	1.2	0.0	0.0	34	63	3	0	7 to 10	5 to 9
Trinity	12 to 15	1.8	1.25	0.55	0.70	3.3	0.7	0.7	0.4	0.0	20	39	37	4	6 to 8	6 to 9
BL2418	13 to 15	2.6	2.10	0.89	1.21	4.3	1.0	1.5	0.1	0.0	24	71	5	0	6 to 8	7 to 9
Naches	14 to 16	2.2	2.05	0.94	1.11	3.9	0.9	0.9	0.4	0.0	23	46	32	0	7 to 9	7 to 10
PLS 183	16 to 18	1.9	1.98	0.99	0.99	3.6	0.5	1.1	0.3	0.0	13	61	26	0	6 to 9	7 to 9

See page 11 for column explanations.

Table 6. Maturity

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

Cultivar	Day 54 33 HU 6/20	Day 55 34 HU 6/21	Day 56 26 HU 6/22	Day 57 23 HU 6/23	Day 58 22 HU 6/24	Day 59 27 HU 6/25	Day 60 34 HU 6/26	Day 61 38 HU 6/27	Day 62 35 HU 6/28	Day 63 30 HU 6/29	Day 64 24 HU 6/30	Day 65 27 HU 7/1	Day 66 27 HU 7/2	Day 67 27 HU 7/3
Tomahawk	85	91			123									
Spring	92	96		106										
FP 2269		84	92	103	123									
BSC2014			82	85	94	106	127							
PLS 14				82	93	90	101	123						
11P42				85	95	94	103	119						
GV435			71	78	86	100	106	124						
Austin			72		82	98	94	123						
BSC3048						90	94	101	129					
LIL Mo						87	96	99	124					
SV7401QH							83	94	96	120				
Portage							90	92	100	141				
GV410								83	110	118	140			
CS-424F						76	85	95	90	115				
SV8112QH									99	118	130			
SV1391QH						76	81	88	94	108	116			
GVS 518								91	89	105	115			
SV0935QH									92	93	113			182
GVS490						71	75	87	101	104	111			
Reliance								75	92	101	102	127		
586-3									79	86	105	125	131	
ASR4249									96	116	116			
CS-437F								77	84	90	104	112		
BSC15L11								75	86	92	97	114		
Ricco									85		103	108		
SV0371QF									74	84	97	108	119	

Table 6. Maturity continued:

Cultivar	Day 57 23 HU 6/23	Day 58 22 HU 6/24	Day 59 27 HU 6/25	Day 60 34 HU 6/26	Day 61 38 HU 6/27	Day 62 35 HU 6/28	Day 63 30 HU 6/29	Day 64 24 HU 6/30	Day 65 27 HU 7/1	Day 66 27 HU 7/2	Day 67 27 HU 7/3	Day 68 27 HU 7/4	Day 69 34 HU 7/5	Day 70 31 HU 7/6
613-1							87	100	102	119				
SV1036QF							81	96	84	115	114			
BL415							84	92	90	95		126		
GV506								94	98	107				
GV 555								94	91	103				
BSC15L21								81	94	102				
Bolero std							84	88	100	102				
251							77		94	94	123			
CS-440AF							74		89	102	118			
522									92		116			
Da 1470							79		92		112			
BL2404							80	79	85	97	101	127		
Duplicate 2404							79	83	87	94	98	138		
513												132	146	
FP2278							81	86	90		109			
CS-439AF								73		86	92	107		158
Iona						69	72		78		90	113	149	
Lochsa									75		92	114	140	
Welland									82	88	98	112		174
SV7688QF									78		99	110		180
PLS 595							70		84	89	104	108		168
SV40893QF							69		86	89	102	96	115	
PLS 179											87	99	103	145
Trinity											86	97	106	139
BL2418									74	83	92		110	132
Naches												94	97	129
PLS 183										81	89	98	101	126

Samples were one gallon of pods (roughly one foot of row by 7 rows - one replication)

Additional Comments:

General comments: It is difficult to draw any definitive conclusions from the trial due to the variation between and within the replicates or even within individual blocks. Overall score based on visual observation and notes for all four replicates (4-best, 1 poorest). **This rating takes into account root rot, plant type, berry type and yield** – if plant and pods looked good and yield was average, it still got a higher rating. * Indicates a 3 or better. **Twiney** – tendrils on afila type very tightly intertwined.

Varieties in order of maturity.

Tomahawk – Aflia leaf type, quite indeterminant, a bit lower plant stand than others, decent plant habit, larger sieve size index, split evenly between single and double pods per node, decent yield. Overall –3.

Spring – Normal leaf type, determinate, early season variety, some root rot in all 4 reps, recumbent plant habit, larger sieve size index, split evenly between single and double pods per node, decent yield. Overall – 3.

FP2269 – Aflia leaf type, had some root rot, uniform pod set (very determinate), split about evenly between single and double pods per node. Overall–3.

BCS2014 – Normal leaf type, early variety, excellent plant stand, dark green foliage, picks hard, very good yield. Overall–3.5.

PLS14 - Normal leaf type, plants are healthy and dark green, a bit lower plant stand than others, very little root rot except for rep 4, quite determinate, very uniform pods in size, good yield. Overall - 3.5.

11P42 – Aflia leaf type, plants have minimal root rot, quite determinate, upright plants, good yield. Overall – 3.5.

GV435 – Aflia leaf type, a bit lower plant stand than others, plants are healthy and had very little root rot, recumbent plant habit, very determinate variety with long pods, decent yield. Overall – 3.

Austin – Aflia leaf type, plants were very determinate, substantial root rot, recumbent plants with a lot of tendrils, good yield (probably would have been better without root rot). Overall – 2.5

BCS3048 – Aflia leaf type, thinner stand than most, healthy, upright plants with very little root rot; short pods, good yield. Overall – 3.75.

LILMO - Normal leaf type, very little root rot except for rep 4, short pods, a smaller sieve, good yield. Over all – 3.25

SV7401QH – Determinate afila leaf type, very determinate plants with some yellowing at the base, some root rot, some recumbent plants, pods are short, shell easily. Over all – 3.25.

Portage – Aflia leaf type, good plant stand, very little root rot, upright plants with short pods, mostly double and triple pods per node, very good yield. Overall – 3.5.

GV410 – Alfia leaf type, a bit lower plant stand than others, very determinant, recumbent plants, have long pods, some plants were dying due to root rot(some pods were drying up up due to the plant dying). Overall – 3.

CS424-F – Normal leaf type, some root rot, very determinant, plants are recumbent, majority of plants had either two to three pods per node, very good yield. Overall – 3.

Additional comments continued:

***SV8112QH** – Determinate afila leaf type, minimal root rot, plant stand was very good, very determinate, pods are short, plants very upright, decent yield. The plants have a yellowish cast but look healthy. Overall – 4.

SV1391QH – Determinate afila leaf type, a bit lower plant stand than others, plants are healthy, very upright, uniform in height and very determinate; decent yield. Overall – 3.75.

GVS518 – Aflia leaf type, a bit lower plant stand than others, plants are recumbent, minimal root rot, very determinate, good yield, pods are long and yellowish in color. Overall – 3.

SV0935QH – Determinate afila leaf type, Sweet Savor genetics, root rot was present, plants are very upright, decent yield (rep 3 was weak and skewed yield). Overall – 3.

GVS490 – Normal leaf type, plants have some root rot and are recumbent, very determinate. They pods are long, has excellent yield potential (most plants were two pods per node). They pods are easy to pick. Overall – 2.75 (mainly due to root rot and plants laying down).

***Reliance** – Determinate afila leaf type, plant stand is very good, very little root rot, very upright plants, very determinate, pods are short and the plants have a yellowish cast, good yield. Overall – 4.

586-3 – Aflia leaf type, quite determinate, excellent plant stand, Rep 2 had very little root rot - Reps, 1,3 and 4 had much more, greenish blue plants with long pods, some triple pods per node, good yield. Overall – 3.5.

ASR4249 – Normal leaf type, quite a bit of root rot, very determinate, dark green, recumbent plants with lots of pods, some triple pods per node. Overall – 3.

CS-437F – Normal leaf type, very little root rot, healthy plants were determinate and very green, mostly two to three pods per node, good yield. Overall – 3.25.

BSC15L11 – Normal leaf type, very good plant stand, upright, very healthy plants (foliage is a greenish blue), plants have little root rot, pods were short and berries a smaller sieve size, high percentage of triple pods per node, very good yield. Overall 3.5.

Ricco – Aflia leaf type, very good plant stand, some root rot, very determinate, plants quite recumbent (partly due to pod load), long pods, mostly 2 pods per node, very good yield. Overall – 3.

SV0371QF – Aflia leaf type, very little root rot, vg plant stand, healthy plants, quite determinate, short pods, small sieve, mostly doubles and triple pods per node, very good yield. Overall – 3.75.

613-1 - Aflia leaf type, minimal root rot, foliage is a blue/green color, small sieve size, mostly double pods per node, very good yield. Overall – 3.5.

SV1036QF – Aflia leaf type, minimal root rot, healthy plants that were upright and determinate, long pods, yield potential looks good (one harvest had good plant stand and the second one was less than optimum). Most two pods per node with some triples, Overall – 3.25.

BL415 – Normal leaf type, a bit lower plant stand than others, minimal root rot, recumbent plants, larger sieve, a high percentage of doubles and triple pods per node, very good yield. Overall – 3.5.

GV506 – Aflia leaf type, minimal root rot, very upright plants, thin plant stand, decent yield with potential for much better with a better plant stand, mostly two pods per node with some triples. Overall – 3.5.

Additional comments continued:

GV555 – Aflia leaf type, very little root rot, small sieve, long, nice looking pods; mostly two pods per node, very good yield. Overall – 3.75.

BSC15L21 – Aflia leaf type, very good plant stand, The plants are extremely healthy, very little root rot, shorter pods, high percentage of triple and quad pods per node, good yield. Overall – 3.5.

Bolero – Normal leaf type, lower plant stand than others, quite a bit of root rot, recumbent plants, very determinate, mostly single and double pods per node but some triples, good yield. Overall – 3.

251 – Aflia leaf type, minimal root rot, a bit lower plant stand than others, a high percentage of double pods per node, 8-10 berries per pod. Overall – 3.

***CS440AF** – Aflia leaf type, very good plant stand, minimal root rot, plants are healthy, upright and determinate; a small sieve berry with a tight shell, some pods had splits in them, mostly double pods per node with a few triples, excellent yield. Overall – 4.0.

522 – Aflia leaf type, minimal root rot, some off types that were indeterminate - plants that continued to bloom but not set pods, mostly double pods per node but some triples and quads as well, good yield. Overall – 3.5.

DA 1470 – Determinate aflia leaf type, a bit lower plant stand than others, minimal root rot. Plants are very determinate, healthy and have a light green foliage, mostly double pods per node with some triples, good yield. Overall – 3.75.

***BL2404** – Aflia leaf type, plants are healthy with very little root rot, pods pick and shell easily, pods are not tight to the berry, mostly double pods per node, very good yield. Overall – 4.0.

***Duplicate BL2404** – Aflia leaf type, plants were healthy with very little root rot, upright and determinate plants that were determinate. When sampling on 7/1/16, the pods were rattling. Very good yield. Overall – 4.

513 – Normal leaf type, a bit lower plant stand than others, some root rot and plants somewhat recumbent, very determinant, pods are fairly long, mostly double pods per node with a few triples. Overall – 2.75.

FP2278 – Aflia leaf type, very little root rot, blue/green foliage, very determinant, plant stand was a bit low, but yield was good, pods are short, mostly 2 pods per node with a few triples. Overall – 3.5.

CS-439AF – Aflia leaf type, plant stand was very good, healthy plants with very little root rot, pods were short, mostly double and triple pods per node. Overall – 3.5.

Iona – Normal leaf type, some root rot, plants are recumbent, very determinant, pods shelled easily, good yield, mostly double and triple pods per node. Overall – 3.

Lochsa – Aflia leaf type, a bit lower plant stand than others, some root rot, upright plants that were quite determinate, single and double pods per node, good yield. Overall – 3.

Welland – Aflia leaf type, a bit lower plant stand than others, several off type plants that were indeterminate, Welland plants were healthy and determinate, pods were short, small sieve, The majority of plants look healthy, even distribution of single, double and triple pods per node, good yield. Overall – ? (too many off types to properly rate but at least average or better).

Additional comments continued:

SV7688QF – Determinate afila leaf type, a bit lower plant stand than others, upright plants, minimal root rot, pods easy to pick (pods almost fell off the vine when there were sampled), variable size pods but mostly short, mostly doubles and triples but a few quad pods per node. Overall – 3.25.

PLS595 – Aflia leaf type, a bit lower plant stand than others, healthy plants with minimal root rot, upright plants, long pods, blue – green foliage, mostly single and double pods per node, very good yield. Overall – 3.5.

SV40893QF – Normal leaf type, the stand was thin, quite a bit of root rot but did not seem to affect yield, mostly double and triple pods per node, good to very good yield. Overall – 3.5.

PLS179 – Aflia leaf type, a bit lower plant stand than others, healthy plants, but a bit indeterminate; very little root rot, mostly single and double pods per node, good yield. Overall – 3.75.

Trinity – Aflia leaf type, very little root rot, deep blue/green foliage color, short pods, high percentage of triple pods per node with a few quads, good yield. Overall – 3.5.

BL2418 – Aflia leaf type, a bit of root rot, thinner stand, upright plants, mostly double pods per node, Overall – 3.5.

Naches – Aflia leaf type, minimal root rot, plants are very recumbent for being an afila type, a bit lower plant stand than others, plants quite indeterminate, long pods, mostly double and triple pods per node, 7-10 berries per pod, good yield. Overall – 3.25.

PLS183 – Aflia leaf type, healthy plants, minimal root rot, recumbent plants for an afila variety, a bit lower plant stand than others, very determinant, mostly double and triple pods per node, good yield. Overall – 3.75.

Descriptions Provided by the Seed Source

Tomahawk (CS-430AF) – *Crites, afila leaf, 1260 heat units, 3.5 average sieve size, germ. 96%.*

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.*

FP2269 – *Gallatin Valley, Early afila leaf type with great emergence in cool soils. 57 days to maturity, Maturity near 1200 heat units, 10 nodes to first flower, 24" plant height, avg. 2 pods per node, 7-8 berries per pod, pod shape is blunt, 3.9 average sieve size. Fusarium (Fop) – HR (1), Powdery Mildew (PM) – HR(1). Good yield.*

BSC2014 – *Brotherton, early season freezer type, compare to Sherwood, 9 nodes to first flower, normal leaf, Germ – 98, 1160 heat units.*

PLS14 – *Pure Line, normal leaf type, germ-90%, 1350 heat units, 3.7 average sieve size, 9 nodes to first flower, high tolerance to Fusarium wilt race 1.*

11P42 – *Pure Line, afila, germ-90%, 1340 heat units,*

GV435 – *Gallatin Valley, First early afila type, have little or no root rot resistance, 57 days to maturity, 1200 avg. heat units, 10 nodes to first flower, 22" avg. plant height, avg. 2 pods per node, avg. sieve size 3.5, 8-9 berries per pod, .*

Descriptions Provided by the Seed Source

Austin (FP 2311) – Gallatin Valley, Second early afila leaf type with good plant vigor. Maturity is considered 60 days or near 1280 heat units. Good plant type, avg. – 12 nodes at first bloom, plant height – 22, avg. pods per node – 2, avg. sieve size – 3.2, avg. berries per pod – 7-8, Fusarium (fop) – HR (1,2), Powdery Mildew (PM) HR(1).

BSC 3048 – Brotherton,

Lil' Mo – Seminis, 1320 heat units to harvest, normal leaf type, 2.6 ave. sieve, 10-11 nodes to first flower, 1-2 pods per node, 8-9 berries per pod, 18 inch plant height, HR for Fus R1 (Fop1) and HR for Fus R2 (Fop2).

SV7401QH – Seminis, heat units 1340, unique determinate, normal leaf with sweet savor trait, sieve size is 3.2, possibly commercially available in 2017.

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.

GV410 – Gallatin Valley, afila, second early - 1360 heat units, 3.8 sieve.

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

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, should be commercially available for 2017.

SV1391QH – Seminis, heat units 1320, Foliage DetA, avg. sieve size is 3.3

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.

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, commercially available.

490 – Gallatin Valley, normal leaf type, second early maturity (1380 heat units). 61 days to maturity, 12 nodes to first bloom, plant height 24", avg. 2 pods per node, avg. sieve size – 3.8, 8-9 berries per pod.

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. A very homogenous fresh product in color and quality. Easy to harvest plant type.

586-3 – Pure Line, mainseason.

ASR4249 – Storm,

CS-437F – Crites,

BSC 15L11 – Brotherton, early stages

Descriptions Provided by the Seed Source

Ricco – Gallatin Valley, Main season 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.

SV0371QF – Seminis, 1480 heat units, indeterminate, afila, one of better root rot tolerance.

613-1 – Pure Line, afila type, germ-90%, 1580 heat units, high tolerance to PM, tolerance to DM.

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

BL415 – Columbia Seed, normal leaf type, 14 nodes to flower, dark green berry color, resistance to pea virus, fusarium wilt race 1, pea wilt and powdery mildew.

GV506 – Gallatin Valley, late - 1560 heat units, afila, 3.8 sieve.

GV 555 – Gallatin Valley

BSC 15L21 – Brotherton,

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.

251 – Pure Line,

CS-440AF – Crites,

522 – Gallatin Valley, Mid-Season Afila type, 69 days to maturity, 1560 heat units, 14-15 nodes to first flower, plant height 25", avg. 3 pods per node, avg. sieve size is 4, 7-8 berries per pod, blunt pod shape, HR (1) to Powdery Mildew (PM),

DA 1470 (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.

BL2404 – Columbia, Maturity to Avola/Spring +10, afila leaf type, dark green 20" plant, 14- 15 nodes to first flower, blunt pod shape, pod length – 8 cm, pod width – 14 mm, pod color – med., pea color – dark, berries per pod – 7, Fusarium race – R, PM – R, Virus – R. Maturity against Lincoln +3.

Duplicate 2404 – Columbia, same as BL2404. Client wanted it in trial twice.

513 – Gallatin Valley, Mid-Season normal leaf type, 69 days to maturity, 1550 heat units, 15 nodes to first bloom, plant height 25", avg, 3 pods per node, avg. sieve size is 4, pod shape is blunt, Bolero type with RR.

FP2278 – Gallatin Valley, Mid-Season Afila type, 69 days to maturity, 1500 heat units, 15 nodes to first flower, plant height 26", avg. 2 pods per node, avg. sieve size is 3.6, 7-9 berries per pod, blunt pod shape, Fusarium (fop) – HR(1,2), Powdery Mildew (PM) – HR (1).

Descriptions Provided by the Seed Source

CS-439AF – *Crites*,

Iona – Pure Line, normal leaf type, 68 days to maturity, 1450 heat units, 14 nodes to first bloom, 2.4 average sieve size, 26-28 inch plant height, average number of pods per node is 3, tolerance to R1 and R2 fusarium wilt races, resistance to powdery mildew.

Lochsa (420AF) – *Crites*, normal leaf type, 1550 heat units, 15 nodes to first flower, 67 days to 100 TR, plant height is 20", 2 pods per node, 8-9 berries per pod, avg. sieve size is 3.69, Fusarium Wilt Races (1,2,5), resistance to PM.

Welland – *Crites*, *afila*,

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.

PLS595 – Pure Line – *afila* leaf type, 1540 heat units, germ-90%, 13 nodes to first flower, high tolerance to Fusarium wilt race 1 and powdery mildew; tolerance to Downy mildew.

SV40893QF – *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.

PLS179 – Pure Line, *afila* leaf type, 1500 heat units, germ-91%, high tolerance: bean leaf roll, PM, Fusarium Root Rot, tolerance to Pea Enation.01

Trinity (CS435) – *Crites*, 1615 heat units, 3.6 avg. sieve size, Race1,2, PM resistance.

BL 2418 – Columbia Seeds, *afila*, 16 nodes to flower, dark berry color, resistance to pea virus, fusarium race 1 and powdery mildew.

Naches – *Crites*, *afila* type, 1640 heat units, 16 nodes to first flower, 72 days to 100TR, plant height – 20", 3 pods per node, 8-9 berries per pod, avg. sieve size is 3.75, Fusarium Wilt Races(s) (1,2,5), resistance to PM.

PLS183 – Pure Line, *afila* type, 1570 heat units, remarkable yields, 15 nodes to first bloom, 3.85 average sieve size, 27-29 inch plant height, 2-3 average pods per node, intense berry color, Tolerance to fusarium and *aphanomyces* root rot

A cutting will be held on November 10th where frozen peas are warmed and evaluated by a number of processing and seed company representatives. Evaluations are done only by seed company and industry representatives.

Table 7. Weather Summary and 110 tenderometer chart

Date	days	Max. Temp.	Min. Temp.	Mean Temp.	Precip.	Acc Precip.	Degree days base 40	acc dd units base 40	Ten. Units	Yield Conver. 110 TU
4/28/16	1	54	29	41.5	0	0	1.5	1.5	80	2.33
4/29/16	2	51	37	44	0	0	4	5.5	81	2.18
4/30/16	3	51	39	45	0	0	5	10.5	82	2.05
5/1/16	4	60	45	52.5	0.05	0.05	12.5	23	83	1.93
5/2/16	5	53	43	48	0.05	0.1	8	31	84	1.82
5/3/16	6	47	36	41.5	0.67	0.77	1.5	32.5	85	1.72
5/4/16	7	55	40	47.5	0	0.77	7.5	40	86	1.64
5/5/16	8	62	47	54.5	0	0.77	14.5	54.5	87	1.57
5/6/16	9	62	44	53	0	0.77	13	67.5	88	1.51
5/7/16	10	57	46	51.5	0.17	0.94	11.5	79	89	1.46
5/8/16	11	65	42	53.5	0.02	0.96	13.5	92.5	90	1.42
5/9/16	12	55	38	46.5	0.03	0.99	6.5	99	91	1.38
5/10/16	13	57	33	45	0	0.99	5	104	92	1.34
5/11/16	14	62	36	49	0	0.99	9	113	93	1.31
5/12/16	15	69	37	53	0	0.99	13	126	94	1.28
5/13/16	16	80	46	63	0.15	1.14	23	149	95	1.25
5/14/16	17	70	48	59	0.25	1.39	19	168	96	1.2
5/15/16	18	65	37	51	0.05	1.44	11	179	97	1.19
5/16/16	19	47	35	41	0.02	1.46	1	180	98	1.17
5/17/16	20	60	38	49	0	1.46	9	189	99	1.15
5/18/16	21	59	40	49.5	0	1.46	9.5	198.5	100	1.13
5/19/16	22	59	36	47.5	0	1.46	7.5	206	101	1.11
5/20/16	23	67	45	56	0	1.46	16	222	102	1.09
5/21/16	24	72	49	60.5	0	1.46	20.5	242.5	103	1.07
5/22/16	25	68	49	58.5	0.02	1.48	18.5	261	104	1.06
5/23/16	26	68	52	60	0	1.48	20	281	105	1.05
5/24/16	27	76	56	66	0	1.48	26	307	106	1.04
5/25/16	28	79	57	68	0	1.48	28	335	107	1.03
5/26/16	29	85	56	70.5	0	1.48	30.5	365.5	108	1.02
5/27/16	30	84	64	74	0.01	1.49	34	399.5	109	1.01
5/28/16	31	83	63	73	0	1.49	33	432.5	110	1
5/29/16	32	89	66	77.5	0	1.49	37.5	470	111	0.99
5/30/16	33	83	62	72.5	0.47	1.96	32.5	502.5	112	0.98
5/31/16	34	81	55	68	0	1.96	28	530.5	113	0.97
6/1/16	35	79	49	64	0	1.96	24	554.5	114	0.96
6/2/16	36	78	52	65	0	1.96	25	579.5	115	0.96

Table 7. Weather Summary continued:

Date	days	Max. Temp.	Min. Temp.	Mean Temp.	Precip.	Acc. Precip.	Degree days base 40	acc dd units base 40	Ten. Units	Yield Conver. 110 TU
6/3/16	37	73	59	66	0.05	2.01	26	605.5	116	0.95
6/4/16	38	79	53	66	0	2.01	26	631.5	117	0.95
6/5/16	39	80	63	71.5	0.11	2.12	31.5	663	118	0.94
6/6/16	40	73	60	66.5	0.2	2.32	26.5	689.5	119	0.94
6/7/16	41	76	54	65	0.05	2.37	25	714.5	120	0.93
6/8/16	42	70	48	59	0.03	2.4	19	733.5	121	0.93
6/9/16	43	56	45	50.5	0	2.4	10.5	744	122	0.92
6/10/16	44	65	48	56.5	0	2.4	16.5	760.5	123	0.92
6/11/16	45	70	49	59.5	0	2.4	19.5	780	124	0.91
6/12/16	46	85	56	70.5	0	2.4	30.5	810.5	125	0.91
6/13/16	47	66	50	58	0	2.4	18	828.5	126	0.9
6/14/16	48	61	45	53	0	2.4	13	841.5	127	0.9
6/15/16	49	70	46	58	0	2.4	18	859.5	128	0.89
6/16/16	50	80	54	67	0.08	2.48	27	886.5	129	0.89
6/17/16	51	79	52	65.5	0	2.48	25.5	912	130	0.89
6/18/16	52	82	54	68	0	2.48	28	940	131	0.88
6/19/16	53	85	56	70.5	0	2.48	30.5	970.5	132	0.88
6/20/16	54	83	63	73	0	2.48	33	1003.5	133	0.88
6/21/16	55	89	59	74	0.1	2.58	34	1037.5	134	0.87
6/22/16	56	76	56	66	0	2.58	26	1063.5	135	0.87
6/23/16	57	73	53	63	0	2.58	23	1086.5	136	0.87
6/24/16	58	77	47	62	0	2.58	22	1108.5	137	0.86
6/25/16	59	80	53	66.5	0	2.58	26.5	1135	138	0.86
6/26/16	60	85	62	73.5	0	2.58	33.5	1168.5	139	0.86
6/27/16	61	89	67	78	0	2.58	38	1206.5	140	0.86
6/28/16	62	87	63	75	0.12	2.7	35	1241.5	141	0.85
6/29/16	63	80	59	69.5	0	2.7	29.5	1271	142	0.85
6/30/16	64	75	53	64	0.1	2.8	24	1295	143	0.85
7/1/16	65	80	53	66.5	0	2.8	26.5	1321.5	144	0.85
7/2/16	66	78	55	66.5	0	2.8	26.5	1348	145	0.85
7/3/16	67	76	58	67	0	2.8	27	1375	146	0.84
7/4/16	68	80	53	66.5	0	2.8	26.5	1401.5	147	0.84
7/5/16	69	84	64	74	0	2.8	34	1435.5	148	0.84
7/6/16	70	80	62	71	0	2.8	31	1466.5	149	0.84
7/7/16	71	90	70	80	0	2.8	40	1506.5	150	0.84

110 TU Chart - The data and chart is from PGRO (<http://www.pgro.org/>). The UK's Center of Excellence for Peas and Beans.