

# 2023 GREEN PEA VARIETY TRIAL REPORT



**Cody Copp**, Extension Horticulturist, Oregon State University Extension Service – Umatilla County  
**Melinda Cramp**, Student Assistant, Oregon State University Extension Service – Umatilla County  
**Aidan Wiggins**, Student Assistant, Oregon State University Extension Service – Umatilla County  
**Don Wysocki**, Extension Soil Scientist, Oregon State University Extension Service – Umatilla County  
**Alan Wernsing**, Columbia Basin Agricultural Research Center

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### Trial notes

The 2023 Green Pea Variety Trial was conducted at the Nibler Farm near Milton-Freewater, OR (45.9867, -118.2889). We would like to thank Gary Nibler for providing the field, land preparation, and weed control for the trial and H.T. Rea Farming for providing sample processing equipment.

Winter precipitation (October 1 to March 31) at the nearby (~7 miles) [Walla Walla Regional Airport](#) was 9.6 inches for 2022-2023, 82% of normal and down from 10.1 inches in 2021-2022. Precipitation from April through June was 2.3 inches for 2023, 45% of normal for this period and down from 9.8 inches in 2022. Heat units to harvest were calculated using a lower threshold of 40 °F with data from the nearby (~5 miles) [Milton-Freewater AgriMet weather station](#).

The trial was sown on April 21, 2023, with a five foot-wide, five-row plot drill (Hege Maschinen GmbH, Germany) with 12-inch row spacing. For comparison, the trial was sown on April 25 in 2022. The 49 check and experimental lines were sown at a rate of 1000 seeds per plot (100 ft<sup>2</sup>) with three replications. The first replication was arranged by ascending heat units to maturity (provided by the seed companies) for demonstration and the second and third replications were randomly assigned (Table 1). Plot dimensions were 5 feet by 20 feet with five-foot alleyways between plots.

Stand counts were taken on May 22, 2023, by randomly placing a 1 by 5-foot quadrat within but perpendicular to the length of the plot and counting the number of emerged plants (Table 3).

Bloom began May 24, 2022, and was determined by the appearance of first blooms in each variety (Table 3). Node count (including subterranean nodes) for first bloom was determined on three plants from each plot and averaged. The latest variety bloomed on June 8, 2022.

Plot harvest began on June 13, 2023, several weeks earlier than the first harvest on July 4 in 2022. Harvest concluded on June 27, 2023. Yield was determined from two combined subsamples of 100 square feet from two plots for each variety (Table 3). Samples were vined and cleaned before being weighed. After weighing, a subsample of approximately 150 mL of cleaned peas was run through a tenderometer to determine tenderometer score.

Plot yield was extrapolated to pounds per acre. Due to low winter rainfall and weather conditions in spring and early summer, ideal maturity was missed for a number of varieties. Additionally, some varieties were too hard to pass through the tenderometer and others that dried in the field were left unharvested. Yield adjustments for a tenderometer score of 100 (Pumphery et al. 1975) are not reliable outside of the range of 80-150 and were not calculated for 2023. Average yield in 2023 was 2092 lb/acre, down from 5548 lb/acre in 2022 despite a lower seeding rate of 800 seeds per plot in 2022.

### Seed provided by:

Brotherton Seed Co., Inc.  
115 N. 1st Street  
Warden, WA 98857  
(509) 765-1816  
<http://brothertonseed.com>

Crites Seed, Inc.  
212 College Street  
Moscow, ID 83843  
(208) 882-5519  
<http://www.critesseed.com>

Pure Line Seeds, Inc.  
1700 W 1st Street  
Warden, WA 98857  
(509) 349-2374  
<https://purelineseed.com>

Gallatin Valley Seed Company  
PO Box 190011  
Boise, ID 83719  
(208) 288-5481  
<https://gallatinvalleyseed.com/>

### For more information

OSU Extension Service – Umatilla County: Green Pea Resources  
<https://extension.oregonstate.edu/umatilla-mf/green-peas>

Green Pea Nutrient Management Inland Northwest – east of the Cascades (EM 9140)  
<https://catalog.extension.oregonstate.edu/em9140>

Peas, Processing – Eastern Oregon  
<https://horticulture.oregonstate.edu/oregon-vegetables/peas-processing-eastern-oregon-0>

Crop Profile for Peas (Green) in Idaho  
<https://ipmdata.ipmcenters.org/documents/cropprofiles/IDpeas-green.pdf>

### References

Pumphery FV, Ramig RE, and RR Allmoras. 1975. Yield-Tenderness Relationships in 'Dark Skinned Perfection' Peas. *Journal of the American Society of Horticultural Science* 100:507-509.

## 2023 Green Pea Variety Trial Report

**Table 1.** 2023 Green Pea Variety Trial plot layout, sown on April 21, 2022, near Milton-Freewater, OR. Check varieties are indicated with an asterisk (\*).

Replication 1			Replication 2			Replication 3		
Plot no.	Variety No.	Variety Name	Plot no.	Variety No.	Variety Name	Plot no.	Variety No.	Variety Name
101	1	PL 0083	201	40	CS-554AF	301	3	Tomahawk
102	2	PL 0084	202	16	Portage	302	14	BSC304
103	3	Tomahawk	203	35	GVS 518	303	27	EXP069
104	4	EXP461	204	22	PLS 167	304	28	Bolero*
105	5	Austin	205	18	EXP125	305	29	Serge*
106	6	GVS 435	206	27	EXP069	306	8	EXP455
107	7	PL 0082	207	3	Tomahawk	307	32	PL 0077
108	8	EXP455	208	48	Naches	308	49	CS-559AF
109	9	PLS 98-356	209	17	Dungeness	309	33	PL 0065
110	10	DGL 0027	210	20	Gusty*	310	41	FP 2278
111	11	CS-548AF	211	6	GVS 435	311	24	CS-492AF
112	12	Ambler	212	23	CS-550AF	312	30	PLS 602
113	13	Saltingo	213	46	BSC799	313	31	PL 0076
114	14	BSC304	214	34	PL 0071	314	18	EXP125
115	15	PLS 613-89	215	32	PL 0077	315	34	PL 0071
116	16	Portage	216	42	EXP612	316	45	CS-515AF
117	17	Dungeness	217	12	Ambler	317	37	CS-553AF
118	18	EXP125	218	39	Eden	318	22	PLS 167
119	19	BSC312	219	13	Saltingo	319	36	CS-514F
120	20	Gusty	220	45	CS-515AF	320	39	Eden
121	21	CS-552F	221	2	PL 0084	321	38	CS-513F
122	22	PLS 167	222	43	CS-441AF	322	10	DGL 0027
123	23	CS-550AF	223	15	PLS 613-89	323	44	BSC737
124	24	CS-492AF	224	25	PLS 566	324	16	Portage
125	25	PLS 566	225	1	PL 0083	325	4	EXP461
126	26	PLS 294-3	226	33	PL 0065	326	21	CS-552F
127	27	EXP069	227	5	Austin	327	19	BSC312
128	28	Bolero*	228	47	CS-558AF	328	26	PLS 294-3
129	29	Serge*	229	8	EXP455	329	17	Dungeness
130	30	PLS 602	230	26	PLS 294-3	330	2	PL 0084
131	31	PL 0076	231	4	EXP461	331	40	CS-554AF
132	32	PL 0077	232	29	Serge*	332	7	PL 0082
133	33	PL 0065	233	31	PL 0076	333	35	GVS 518
134	34	PL 0071	234	30	PLS 602	334	23	CS-550AF

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Replication 1			Replication 2			Replication 3		
Plot no.	Variety No.	Variety Name	Plot no.	Variety No.	Variety Name	Plot no.	Variety No.	Variety Name
135	35	GVS 518	235	21	CS-552F	335	42	EXP612
136	36	CS-514F	236	10	DGL 0027	336	43	CS-441AF
137	37	CS-553AF	237	41	FP 2278	337	5	Austin
138	38	CS-513F	238	14	BSC304	338	1	PL 0083
139	39	Eden	239	28	Bolero*	339	25	PLS 566
140	40	CS-554AF	240	37	CS-553AF	340	11	CS-548AF
141	41	FP 2278	241	44	BSC737	341	46	BSC799
142	42	EXP612	242	24	CS-492AF	342	48	Naches
143	43	CS-441AF	243	19	BSC312	343	15	PLS 613-89
144	44	BSC737	244	38	CS-513F	344	47	CS-558AF
145	45	CS-515AF	245	49	CS-559AF	345	6	GVS 435
146	46	BSC799	246	7	PL 0082	346	9	PLS 98-356
147	47	CS-558AF	247	36	CS-514F	347	13	Saltingo
148	48	Naches	248	9	PLS 98-356	348	12	Ambler
149	49	CS-559AF	249	11	CS-548AF	349	20	Gusty*

## 2023 Green Pea Variety Trial Report

**Table 2.** 2023 Green Pea Variety Trial entries with leaf type, seed weight, germination rate, node, and heat units to maturity information provided by participating seed companies.

Company	Variety	Type	Seeds/lb	Germ. rate (%)	Node of first bloom	Heat units (40 °F)
Pure Line	PL 0083	afila	ND	ND	10	1200
Pure Line	PL 0084	afila	ND	ND	10	1200
Crites	Tomahawk	afila	2131	97	9	1230
Brotherton	EXP461	afila	2413	96	10-11	1240
Gallatin	Austin	afila	2068	94	12	1240
Gallatin	GVS 435	afila	2307	97	10	1240
Pure Line	PL 0082	afila	ND	ND	12	1250
Brotherton	EXP455	afila	2314	93	10-11	1260
Pure Line	PLS 98-356	afila	ND	ND	11-12	1270
Pure Line	DGL 0027	afila	ND	ND	12	1270
Crites	CS-548AF	afila	2719	98	10	1275
Crites	Ambler	afila	2259	96	10	1285
Pure Line	Saltingo	afila	ND	ND	11-12	1300
Brotherton	BSC304	afila	2889	98	12	1310
Pure Line	PLS 613-89	afila	ND	ND	11-12	1320
Crites	Portage	afila	2064	97	10	1325
Crites	Dungeness	afila	2305	99	10	1325
Brotherton	EXP125	afila	2653	98	14	1340
Brotherton	BSC312	normal	2110	92	12	1350
Brotherton	Gusty	afila	2622	98	12	1350
Crites	CS-552F	normal	2495	ND	12	1355
Pure Line	PLS 167	afila	ND	ND	12-13	1370
Crites	CS-550AF	afila	2112	ND	13	1375
Crites	CS-492AF	afila	2328	ND	13	1430
Pure Line	PLS 566	afila	ND	ND	13-14	1430
Pure Line	PLS 294-3	afila	ND	ND	11-12	1430
Brotherton	EXP069	afila	2413	97	14	1440
Pure Line	Bolero	normal	2628	ND	15-16	1460
Pure Line	Serge	afila	2638	ND	14	1460
Pure Line	PLS 602	afila	ND	ND	15-16	1470
Pure Line	PL 0076	afila	ND	ND	15	1470
Pure Line	PL 0077	afila	ND	ND	15	1470
Pure Line	PL 0065	afila	ND	ND	15	1470
Pure Line	PL 0071	afila	ND	ND	15	1470
Gallatin	GVS 518	afila	2498	92	11	1485

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<b>Company</b>	<b>Variety</b>	<b>Type</b>	<b>Seeds/lb</b>	<b>Germ. rate (%)</b>	<b>Node of first bloom</b>	<b>Heat units (40 °F)</b>
Crites	CS-514F	normal	2121	ND	14	1490
Crites	CS-553AF	afila	2467	ND	13	1495
Crites	CS-513F	normal	2686	ND	15	1525
Crites	Eden	afila	2865	93	14	1530
Crites	CS-554AF	afila	2838	ND	14	1540
Gallatin	FP 2278	afila	2562	96	15	1540
Brotherton	EXP612	afila	2140	92	16	1550
Crites	CS-441AF	afila	1965	96	15	1565
Brotherton	BSC737	afila	2413	94	15-17	1570
Crites	CS-515AF	afila	2768	98	14	1575
Brotherton	BSC799	afila	2684	94	15	1590
Crites	CS-558AF	afila	3047	ND	16	1620
Crites	Naches	afila	2454	96	16	1630
Crites	CS-559AF	afila	2702	ND	15	1640

## 2023 Green Pea Variety Trial Report

**Table 3.** 2023 Green Pea Variety Trial entries with field data collected from the 2023 trial.

Variety	Stand density (plants/ft <sup>2</sup> )	Bloom date	Nodes at first bloom	Harvest date	Days to harvest	Heat units (40 °F)	Tenderometer score	Yield (lb/acre)
PL 0083	10.1	5/24	10	6/13	53	1291	177	1786
PL 0084	9.9	5/25	10	6/13	53	1291	171	2151
Tomahawk	8.4	5/24	9	6/13	53	1291	too hard	1066
EXP461	10.4	5/27	10	6/15	55	1335	166	2343
Austin	10.5	5/26	12	6/13	53	1291	181	1066
GVS 435	9.9	5/24	10-11	6/13	53	1291	192	1316
PL 0082	8.5	5/25	11	6/15	55	1335	174	1633
EXP455	10.5	5/25	10	6/13	53	1291	189	1268
PLS 98-356	10.3	5/25	10	6/13	53	1291	170	1537
DGL 0027	10.8	5/27	11	6/15	55	1335	124	1719
CS-548AF	9.2	5/25	9	6/13	53	1291	155	1268
Ambler	9.6	5/26	9	ND <sup>a</sup>	ND	ND	ND	ND
Saltingo	10.4	5/29	12	6/15	55	1335	94	1671
BSC304	10.5	5/27	10	6/15	55	1335	146	1585
PLS 613-89	9.8	5/27	10	6/15	55	1335	125	1709
Portage	10.7	5/29	10	6/15	55	1335	115	2113
Dungeness	8.9	5/26	10	6/15	55	1335	153	1671
EXP125	10.5	5/27	11	6/13	53	1291	153	951
BSC312	10.7	5/27	10-11	6/15	55	1335	132	1229
Gusty	8.8	5/28	10	6/15	55	1335	124	1873
CS-552F	10.3	5/31	11	6/15	55	1335	119	2151
PLS 167	11.2	5/30	12	6/15	55	1335	105	2401
CS-550AF	10.8	5/29	11-12	6/15	55	1335	93	2132
CS-492AF	10.5	5/31	12	6/15	55	1335	90	2439
PLS 566	8.9	5/31	12	6/21	61	1459	147	2430



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Variety	Stand density (plants/ft <sup>2</sup> )	Bloom date	Nodes at first bloom	Harvest date	Days to harvest	Heat units (40 °F)	Tendero- meter score	Yield (lb/acre)
PLS 294-3	11.3	5/31	11	6/21	61	1459	too hard	2228
EXP069	9.0	5/31	12-14	6/20	60	1439	144	2266
Bolero	10.5	6/2	14	ND	ND	ND	ND	ND
Serge	8.5	6/4	16	6/20	60	1439	105	1537
PLS 602	10.6	6/3	15-16	6/7	47	1105	131	2478
PL 0076	9.9	6/3	16	ND	ND	ND	ND	ND
PL 0077	10.0	6/3	15-16	6/20	60	1439	101	2458
PL 0065	8.7	6/1	13-14	6/21	61	1459	150	2458
PL 0071	9.9	6/1	16	6/20	60	1439	125	2631
GVS 518	10.6	5/30	11-12	6/15	55	1335	89	1901
CS-514F	8.9	6/2	14	6/20	60	1439	139	2074
CS-553AF	9.7	6/2	15	ND	ND	ND	ND	ND
CS-513F	10.1	6/4	16	ND	ND	ND	ND	ND
Eden	9.2	6/3	14-15	6/21	61	1459	116	2747
CS-554AF	9.3	6/5	15	6/20	60	1439	101	2727
FP 2278	9.0	6/2	15	6/21	61	1459	132	2266
EXP612	8.1	6/6	17	6/21	61	1459	97	1978
CS-441AF	10.1	6/5	16	6/21	61	1459	118	3284
BSC737	9.7	6/6	17	6/27	67	1642	195	3496
CS-515AF	11.8	6/5	15	6/21	61	1459	85	2891
BSC799	9.3	6/5	14-15	6/27	67	1642	180	3496
CS-558AF	11.3	6/6	16	6/27	67	1642	178	2170
Naches	8.9	6/6	16	6/20	60	1439	71	2391
CS-559AF	10.0	6/8	15-16	6/27	67	1642	115	3054

<sup>a</sup> ND = data not collected