

**Report to the Oregon Processed Vegetable Commission
1992-1993**

1. **Title:** Green Bean Breeding
2. **Project Leaders:** J. R. Baggett, Horticulture
Brian Yorgey, Food Science and Technology
Dan Farkas, Food Science and Technology
3. **Project Status:** Terminating June 30, 1993
4. **Project Funding:** \$39,000 breeding
\$25,000 breeding supplementary technical support
\$14,355 processing

Breeding funds were used for a major portion of the support of two vegetable breeding technicians, student labor, supplies, and research farm expenses. Processing funds were used for processing samples of experimental beans, laboratory analysis, and panel evaluations.

5. **Objectives:** Breed bush green beans for the western Oregon processing industry with:
 - A. Improved potential for high yields at favorable sieve sizes and dependability
 - B. Improved straightness, texture, and other quality factors
 - C. Develop easy picking and small pod strains of Blue Lake type
 - D. Resistance to white mold and root rot

6. **Report of Progress:**

- A. Performance and quality of advanced breeding lines were tested in seven replicated yield trials, planted about every 10 days from May 6 to July 8. Trials 2, 4, 5, 6, and 7 included eight OSU varieties and lines along with four commercial varieties of the small sieve or "baby bean" type for comparison with OSU baby bean line 5446. Trials 1 and 3 included seven additional new OSU lines, two of which were omitted from harvest. Since several OSU lines were of the easy picking type, the variety Easy Pick was included in all of the seven trials. The 1992 trials included OSU 5402 (now Oregon 54) compared with related lines, with Oregon 91G as standard control. Plots were 20' long, replicated four times. From one to five five-foot harvests were made from each plot, usually at two-day intervals. Samples were taken, according to plan, to Food Science and Technology for canning and freezing. Processed quality data will be presented in a supplemental report.

When the detailed data on yield of standard size beans (Tables 1-3) were used to calculate \$/acre, it was not possible to make totally valid comparisons between variety means because they were not derived from a uniform number of harvests or uniform maturity at harvest. When the average \$/acre shown in Table 4 was used for comparison, Oregon 91G was lowest compared to the newer lines OSU 5402, 5256, 5416, and 5421. When harvests were selected for closeness to 50-55% 1-4 sieve, shown as Selected \$/A in Table 4, or when the highest value harvest for each variety was used, the results were similar. A summary of these results is as follows:

Variety	Season Average \$/A Based on		
	Trial Averages*	Selected Harvest	Highest Harvest
Oregon 91G	1376	1402	1474
OSU 5256	1413	1433	1537
OSU 5402	1531	1609	1682
OSU 5416	1560	1591	1663
OSU 5421	1697	1757	1807
OSU 5445	1469	1488	1628
OSU 5520	1154	1472	1522

*Average of 1-3 harvests from seven trials.

OSU 5402 values were \$155, \$207, and \$208 higher than those of Oregon 91G, and OSU 5256 also exceeded Oregon 91G. The highest yielding line was 5421, which was as much as \$300 higher than Oregon 91G. It was noted during the season that OSU 5421 seemed to be much less affected by hot weather. OSU 5416 and 5421 should be continued in tests. However, as Table 7 shows, OSU 5421 had the highest score for white mold infection.

Of the newer standard lines, several, but especially OSU 5545, had good \$/acre values but were not consistent. Several of these lines, including 5520, 5545, 5556, 5558, and 5566 are of the easy picking type.

Small sieve variety performance is shown in Table 5. In calculating \$/acre, 2-, 3-, and 4-sieve pods were assigned the same value, \$300/ton. Actual value of these sizes may vary among the processing companies. Giving equal value to 2-, 3-, and 4-sieve pods results in the highest \$/acre values occurring at the more mature stages, which may not be the most profitable stage for the processors. Assuming these varieties are grown to increase the percentage of 3-sieve pods in the annual pack, and that 3-sieve pods are most important, the harvest with the largest tonnage of 3-sieve pods has been starred on Table 5. This harvest was usually, but not always, the last one of the planting date. In the next column, a # marks the harvest with the highest percentage of 3-sieve pods. In trials 1 and 3, the highest value for 76-110 was not used because the 3-sieve pods had become seedy. Season averages based on these two methods of comparison are as follow:

Variety	Season Average \$/Acre Based on	
	Highest T/A 3-sieve	Highest % 3-sieve
OSU 5446	1816	1524
76-110	1191	1112
Dandy	1760	1705
Teseo	1436	1143
Banquet	1451	1277

It should be recognized that the above figures do not reflect the quality of the 3-sieve pods, which is assumed to be the same in all harvests. This was generally observed to be true except in the case of 76-110, trials 1 and 3, as noted above. Of the five varieties included, only OSU 5446 and Rogers-NK 76-110 are sufficiently typical of Blue Lake beans in color and flavor to be packed with Oregon 91G. Dandy, while an excellent producer of small sieve beans, has unacceptably light color for Blue Lake markets. OSU 5446 produces a higher percentage of 4-sieve (compared to 3-sieve) than Dandy and 76-110. OSU 5446 pods are short, slightly curved, and somewhat oval, but have excellent color, smoothness, and flavor.

- B. Tables 6 and 7 show root rot and white mold infection scores for the lines included in the yield trial and a few new breeding lines. Oregon 54 averaged 5.75 compared to 5.0 for Oregon 91G in the white mold test (0 = no infection, 10 = complete infection), while OSU 5446 was the same as Oregon 91G. Average root rot scores were Oregon 54 (5402) 3.0, Oregon 91G 3.5, and 5446 4.5. OSU 5256 and 5421 also scored 4.5.
- C. Newer breeding material involved in the program included many new small sieve crosses, including 5446 x 76-110, and populations from intercrosses of OSU standard bush Blue Lake lines.

7. Summary:

In replicated trials, Oregon 54 (5402), OSU 5416, OSU 5256, and OSU 5421 produced higher \$/acre value than Oregon 91G, even though adverse effects of hot weather on these lines were apparent in most trials. OSU 5421 was the most tolerant of heat, apparently, and produced the highest yields and return. Small sieve line OSU 5446 compared well in \$/acre with Dandy, 76-110, Teseo, and Banquet. OSU 5446 produced the highest season average of the small sieve types, but it tends to be higher in percentage of 4-sieve pods (compared to 3-sieve) than Dandy and 76-110.

8. Signatures:

Redacted for Privacy

Project Leaders:

Redacted for Privacy

U U /

Department Heads:

Redacted for Privacy

Redacted for Privacy

Table 1. Green bean yields, May 6 planting, Corvallis, 1992.¹

Line	Av. Stand	Harvest 1				Harvest 2				Harvest 3				Av. Adj. T/A
		Days	% 1-4	T/A	Adj. T/A	Days	% 1-4	T/A	Adj. T/A	Days	% 1-4	T/A	Adj. T/A	
91G	148	66	82	6.3	8.3	68	36	9.0	7.7*					8.0
5256	150	66	92	5.7	7.6	68	57	7.2	7.3*	70	44	8.6	7.7	7.5
5402	150	68	64	7.8	9.1	70	46	9.9	9.5*	72	36	10.3	8.9	9.2
5403	150	66	91	6.5	9.2	68	58	9.0	9.7	70	42	10.7	9.9*	9.6
5416	141	68	66	7.1	8.2	70	55	7.9	8.3*	72	41	9.0	8.2	8.2
5421	135	66	82	6.6	8.8	68	48	9.3	9.1*	70	39	11.1	9.9	9.3
5445	142	64	64	4.4	5.0	65	64	6.6	7.5*	68	36	9.3	8.0	6.8
5520	145	65	74	6.0	7.5	68	34	9.2	7.7*					7.6
5545	147	68	78	6.5	8.3	70	63	7.8	9.0	72	51	7.5	7.6*	8.3
5556	147	68	85	7.3	9.8	70	77	8.0	10.1	72	56	8.6	9.1*	9.7
5558	150	66	95	4.4	6.4	68	67	6.7	7.9*					7.2
5566	148	68	72	6.2	7.6*									7.6
Easy Pick	112	68	85	5.8	7.8	70	73	6.7	8.3	72	50	7.3	7.3*	7.8

¹Mean of 4 replications; subplots of 5' were harvested from 20' plots on each harvest date; rows 36" apart; days = days from planting; % = percent 1-4 sieve grades; adj. T/A = tons per acre adjusted to 50% 1-4 sieve except 5256, which was adjusted to 55% 1-4 sieve. Analysis of variance calculated using the harvest closest to 50% 1-4 sieve for each line (55% for 5256), marked with *. Differences between means were not significant.

Table 2. Green bean yields, May 26 planting, Corvallis, 1992.¹

Line	Av. Stand	Harvest 1				Harvest 2				Harvest 3				Av. Adj. T/A
		Days	% 1-4	T/A	Adj. T/A	Days	% 1-4	T/A	Adj. T/A	Days	% 1-4	T/A	Adj. T/A	
91G	148	63	87	7.3	10.0	65	70	9.0	10.7	67	51	10.2	10.3*	10.3
5256	148	63	92	7.9	10.6	65	82	8.5	10.6	67	68	9.4	10.5*	10.6
5402	148	65	80	8.8	11.5	67	61	10.0	11.1	69	61	10.9	12.1*	11.6
5403	150	65	74	9.2	11.5	67	57	10.2	10.9*	69	38	12.0	10.6	11.0
5416	150	65	83	8.9	11.9	67	58	9.9	10.7	69	48	11.5	11.3*	11.3
5421	147	64	88	8.9	12.3	66	71	9.9	11.8	69	41	11.7	10.6*	11.6
5445	148	63	70	8.7	10.5	65	65	10.2	11.7	67	48	10.7	10.4*	10.9
5520	146	62	89	7.5	10.4	64	69	9.3	11.1	66	49	11.1	11.0*	10.8
5545	148	64	97	8.6	12.6	66	93	9.8	13.9	67	55	11.2	11.8*	12.8
5556	150	65	98	6.6	9.8*									9.8
5558	148	64	92	8.4	11.9	66	76	9.4	11.8	69	36	10.3	8.9*	10.9
5566	147	64	90	8.0	11.2	66	78	8.6	11.0	69	41	9.8	8.9*	10.4
Easy Pick	145	63	99	4.8	7.2	65	96	6.7	9.7	67	71	8.3	10.4*	9.1

¹Mean of 4 replications; subplots of 5' were harvested from 20' plots on each harvest date; rows 36" apart; days = days from planting; % = percent 1-4 sieve grades; adj. T/A = tons per acre adjusted to 50% 1-4 sieve except 5256, which was adjusted to 55% 1-4 sieve. Analysis of variance calculated using the harvest closest to 50% 1-4 sieve for each line (55% for 5256), marked with *. LSD for comparing * means was 1.9 T/A at 5% significance.

Table 3. Yields of selected OSU bean lines on five planting dates, Corvallis, 1992.¹

Line	Av. Stand	Harvest 1				Harvest 2				Harvest 3				Harvest 4				Av. Adj. T/A	LSD ² Adj. T/A
		Days	% 1-4	T/A	Adj. T/A	Days	% 1-4	T/A	Adj. T/A	Days	% 1-4	T/A	Adj. T/A	Days	% 1-4	T/A	Adj. T/A		
91G	149	66	75	4.8	6.0	68	58	6.6	7.1*									6.6	2.2
5256	150	66	69	5.4	6.1	68	57	5.3	5.4*									5.8	
5402	147	66	57	4.5	4.8*													4.8	
5416	142	66	53	5.3	5.4*	68	40	6.5	5.8									5.6	
5421	136	66	58	8.0	8.7*	68	31	9.2	7.5									8.1	
5445	146	66	50	7.4	7.4*													7.4	
5520	147	66	63	6.3	7.1	68	47	8.0	7.8*									7.5	
Easy Pick	123	66	87	5.1	7.0	68	62	7.0	7.9*									7.5	
91G	150	62	79	6.9	8.9	64	61	7.7	8.5	68	68	9.2	10.8*					9.4	2.8
5256	150	63	89	7.4	9.7	64	85	8.2	10.4	67	78	8.3	10.1*					10.1	
5402	150	64	85	8.2	11.1	67	76	10.1	12.7	69	69	11.4	13.5*					12.4	
5416	150	64	75	8.8	11.0	67	70	9.5	11.4	69	70	10.2	12.2*					11.5	
5421	148	64	72	9.3	11.4	67	62	11.7	13.1	69	55	12.0	12.6*					12.4	
5445	150	62	65	10.0	10.1*	64	51	10.0	10.1	67	43	11.3	10.6					10.3	
5220	150	63	66	7.4	8.6	64	53	8.4	8.6*	67	43	10.3	9.6					8.9	
Easy Pick	148	62	100	3.8	5.7	64	84	4.9	6.6	68	76	8.6	10.8*					7.7	

May 15 Planting

June 4 Planting

Table 3. Yields of selected OSU bean lines on five planting dates, Corvallis, 1992 (cont).¹

Line	Av. Stand	Harvest 1				Harvest 2				Harvest 3				Harvest 4				Av. Adj. T/A	LSD ² Adj. T/A
		Days	% 1-4	T/A	Adj. T/A	Days	% 1-4	T/A	Adj. T/A	Days	% 1-4	T/A	Adj. T/A	Days	% 1-4	T/A	Adj. T/A		
91G	150	62	56	8.9	9.5*	64	26	11.3	8.6									9.1	2.5
5256	150	62	82	8.2	10.2	64	48	8.2	7.7*	66	38	10.8	9.1					9.0	
5402	150	62	75	7.8	9.8	64	37	9.6	8.3*	66	28	11.2	8.7					8.9	
5416	150	62	72	8.2	10.0	64	44	10.3	9.7*	66	33	9.5	7.9					9.2	
5421	150	62	74	9.9	12.3	64	42	11.7	10.8*	66	28	12.5	9.7					10.9	
5445	150	59	81	6.5	8.5	62	59	9.2	10.1*	64	34	9.3	7.8					8.8	
5520	147	62	64	8.0	9.1*	64	28	9.9	7.7									8.4	
Easy Pick	150	62	94	5.4	7.8	64	47	7.3	6.8*	67	39	7.4	6.6					7.1	
91G	150	57	76	6.8	8.6	59	62	7.5	8.4	61	56	6.8	7.2	62	48	8.7	8.6*	8.2	1.9
5256	150	57	90	6.2	8.2	59	86	7.0	9.0	61	76	6.4	7.6*					8.3	
5402	150	57	90	5.6	7.9	59	79	6.5	8.3	61	65	8.2	9.4	63	63	8.7	9.8*	8.9	
5416	150	57	91	4.9	7.0	59	80	5.1	6.6	61	77	6.4	8.1	63	46	8.5	8.2*	7.5	
5421	150	57	85	6.5	8.7	59	77	8.8	11.2	61	70	9.1	10.9	63	45	10.4	9.9*	10.2	
5445	150	56	76	7.3	9.1	59	58	8.9	9.6	61	53	8.9	9.2*					9.3	
5220	150	56	78	4.8	6.1	59	49	7.4	7.3*	61	45	8.0	7.6					7.0	
Easy Pick	150	59	89	5.5	7.6	61	83	6.2	8.2	65	68	7.8	9.2*					8.3	

June 16 Planting

June 26 Planting

Table 3. Yields of selected OSU bean lines on five planting dates, Corvallis, 1992 (cont).¹

Line	Av. Stand	Harvest 1				Harvest 2				Harvest 3				Harvest 4				Av. Adj. T/A	LSD ² Adj. T/A
		Days	% 1-4	T/A	Adj. T/A	Days	% 1-4	T/A	Adj. T/A	Days	% 1-4	T/A	Adj. T/A	Days	% 1-4	T/A	Adj. T/A		
91G	149	61	93	7.3	10.5	63	84	7.6	10.2	65	67	8.5	10.0	68	39	10.7	9.5*	10.1	NS
5256	150	63	92	7.7	9.4	65	78	8.2	9.9	68	53	9.2	9.1*					9.5	
5402	150	64	79	8.0	10.3	66	61	6.6	7.3	68	57	10.2	10.9*	70	33	10.3	8.5	9.3	
5416	150	64	71	9.3	11.3	66	52	10.5	10.8*	68	46	11.4	10.9					11.0	
5421	149	64	84	7.9	10.6	66	59	10.0	10.9	68	47	10.2	9.9*					10.5	
5445	150	63	61	9.5	10.6	65	53	10.8	11.1	68	33	8.5	8.7*					10.1	
5520	149	62	88	6.3	8.7	64	68	8.5	10.0	66	43	9.4	8.7*					9.1	
Easy Pick	146	61	100	3.0	4.6	63	97	3.5	5.2	65	95	5.0	7.3	68	83	8.0	10.7*	7.0	

July 8 Planting

¹Means of 4 replicates; subplots of 5' were harvested from double 20' plots on each harvest date; rows 36" apart; days = days from planting; % = percent 1-4 sieve grades; adj. T/A = tons/acre adjusted to 50% 1-4 sieve except 5256, which was adjusted to 55% 1-4 sieve.

²Analysis of variance calculated using the harvest marked *; LSD was calculated at 0.05 significance to compare values marked *.

Table 4. Dollar return/acre for standard OSU lines, seven trials, 1992.¹

Trial	Variety	Harvest 1			Harvest 2			Harvest 3			Avg. \$/A ²	Selected \$/A ³
		Days	%	\$	Days	%	\$	Days	%	\$		
1 May 6	91G	66	82	1170	68	36	1345				1258	1345
	5256	66	92	1122	68	57	1290	70	44	1422	1278	1290
	5402	68	64	1508	70	46	1700	72	36	1682	1630	1700
	5403	66	91	1200	68	58	1637	70	42	1724	1520	1637
	5416	68	66	1297	70	55	1336	72	41	1454	1362	1336
	5421	66	82	1194	68	48	1517	70	39	1722	1478	1517
	5445	64	64	598	66	64	1035	68	36	1398	1010	1035
	5520	65	74	1106	68	34	1441				1274	1441
	5545	68	78	1450	70	63	1565	72	51	1519	1512	1519
	5556	68	85	1579	70	77	1666	72	56	1622	1622	1622
	5558	66	95	577	68	67	1298				937	1298
	Easy Pick	68	85	1058	70	73	1243	72	50	1318	1216	1318
2 May 15	91G	66	75	637	68	58	738				687	738
	5256	66	69	754	68	57	700				727	700
	5402	66	57	639							639	639
	5416	66	53	844	68	40	905				874	844
	5421	66	58	1343	68	31	1181				1262	1343
	5445	66	50	1145							1145	1145
	5520	66	63	975	68	47	1193				1084	1193
	Easy Pick	66	87	965	68	62	1182				1073	1182
3 May 26	91G	63	87	1446	65	70	1649	67	51	1767	1621	1649
	5256	63	92	1495	65	82	1799	67	68	1869	1721	1869
	5402	65	80	1712	67	61	1934	69	39	1748	1798	1748
	5403	65	74	1765	67	57	1880	69	38	1958	1868	1934
	5416	65	83	1819	67	58	1965	69	48	2072	1952	2072
	5421	64	88	1768	66	71	1875	68	41	1861	1835	1861
	5445	63	70	1734	65	65	2073	67	48	1977	1928	1997
	5520	62	89	1347	64	69	1731	66	49	1962	1680	1962
	5545	64	97	1862	66	93	2281	69	55	2117	2087	2117
	5556	65	98	1175							1175	1175
	5558	64	92	1873	66	76	1961	69	36	1697	1844	1697
	5566	64	90	1702	66	78	1900	69	41	1638	1746	1638
	Easy Pick	63	99	762	65	96	1338	67	76	1419	1173	1419
4 June 4	91G	62	79	1163	64	61	1387	68	68	1544	1365	1544
	5256	63	89	1367	64	85	1548	67	78	1706	1540	1706
	5402	64	85	1508	67	76	1989	69	69	2287	1928	2287
	5416	64	75	1648	67	70	1786	69	70	1949	1794	1949
	5421	64	72	1659	67	62	2070	69	55	2135	1955	2135
	5445	62	65	1357	64	51	1557	67	43	1796	1570	1557
	5520	63	66	1252	64	53	1367	67	43	1629	1415	1367
	Easy Pick	62	100	399	64	84	751	68	76	1120	756	1120

Table 4. Dollar return/acre for standard OSU lines, seven trials, 1992 (cont.).¹

Trial	Variety	Harvest 1			Harvest 2			Harvest 3			Avg. \$/A ²	Selected \$/A ³
		Days	%	\$	Days	%	\$	Days	%	\$		
5 June 16	91G	62	56	1542	64	26	1676				1609	1542
	5256	62	82	1710	64	48	1438	66	38	1773	1640	1438
	5402	62	75	1511	64	37	1505	66	28	1717	1577	1505
	5416	62	72	1652	64	44	1746	66	33	1475	1624	1746
	5421	62	74	1917	64	42	1961	66	28	1797	1892	1961
	5445	59	81	1303	62	59	1637	64	34	1436	1459	1637
	5520	62	64	1516	64	28	1527				1522	1516
	Easy Pick	62	94	1148	64	47	1272	66	39	1230	1217	1272
6 June 26	91G	59	62	1505	61	56	1256	62	48	1510	1424	1256
	5256	57	90	1186	59	86	1525	61	76	1321	1344	1321
	5402	59	79	1312	61	65	1626	63	63	1516	1485	1516
	5416	59	80	1284	61	77	1301	63	46	1523	1369	1523
	5421	59	77	1695	61	70	1728	63	45	1725	1716	1725
	5445	56	76	1478	59	58	1673	61	53	1578	1576	1578
	5520	56	78	956	59	49	1249	61	45	1304	1170	1249
	Easy Pick	59	89	1041	62	83	1275	65	68	1540	1285	1540
7 July 8	91G	63	84	1553	65	67	1705	68	39	1745	1668	1745
	5256	63	92	1534	65	78	1692	68	53	1711	1646	1711
	5402	66	61	1558	68	57	1871	70	33	1566	1665	1871
	5416	64	71	1882	66	52	1963	68	46	1993	1946	1963
	5421	64	84	1583	66	59	1882	68	47	1761	1742	1761
	5445	63	61	1678	65	53	1471	68	33	1639	1596	1471
	5520	62	88	1189	64	68	1598	66	43	1577	1454	1577
	Easy Pick	63	97	512	65	95	915	68	83	1627	1018	1627

¹Based on a value of \$275 for 3 and 4 sieve pods; \$127 for 5 and 6 sieve pods. 1 and 2 sieve pods excluded.

²Average \$/acre is a rough estimate because of non-uniform number of trials and maturities included.

³Selected best values for comparison. Usually the same value used for Analysis of Variance in Tables 1-3.

Table 5. Performance of small sieve green bean varieties, Corvallis, 1992.

Trial	Variety	Days	Percent			Tons/Acre				\$/Acre ³	*	#
			2 ¹	3	4	2	3	4	Total ²			
1 May 6	5446	64	24	41	10	1.74	0.44	0.73	4.3	965		
		66	10	54	22	2.79	1.12	0.25	5.1	1351		#
		68	3	31	46	2.21	3.23	1.16	7.1	1841	*	
	76-110	65	22	50	6	1.56	0.18	0.04	3.1	728		
		68	8	55	25	3.08	1.41	0.22	5.6	1505	*	#
		70	7	46	31	2.86	1.92	0.58	6.2	1630		
	Dandy	64	21	49	10	1.67	0.33	0.00	3.4	810		
		66	16	58	10	2.43	0.40	0.04	4.2	1054		
		68	10	66	12	3.92	0.72	0.07	5.9	1586	*	#
	Teseo	66	13	62	10	2.43	0.40	0.04	3.9	1010		#
		68	6	48	34	2.50	1.78	0.25	5.2	1412		
		70	3	32	50	1.96	3.12	0.72	6.2	1669	*	
	Banquet	70	3	60	32	3.12	1.67	0.11	5.2	1492		#
		72	3	44	46	2.14	2.21	0.18	4.8	1376	*	
	2 May 15	5446	66	7	38	26	0.34	1.85	1.27	4.8	1152	*
76-110		66	25	40	10	0.47	0.76	0.18	1.9	424		
		67	18	44	14	0.54	1.34	0.44	3.0	718	*	#
Dandy		63	9	76	6	0.42	3.41	0.25	4.5	1223		
		66	6	79	8	0.36	4.46	0.47	5.7	1588	*	#
Teseo		68	26	34	10	0.82	1.05	0.33	3.1	671		
		70	26	35	9	0.96	1.27	0.33	3.7	784	*	#
Banquet		68	37	24	2	0.78	0.51	0.04	2.1	397		
		70	34	28	4	0.82	0.69	0.11	2.4	484	*	#
3 May 26	5446	60	25	45	5	1.34	2.39	0.25	5.3	1196		
		62	11	59	17	0.82	4.24	1.20	7.2	1889		
		64	7	61	22	0.58	4.93	1.78	8.1	2212	*	#
	76-110	63	25	48	3	0.98	1.88	0.11	4.0	892		
		64	17	62	4	0.60	2.14	0.14	3.5	865	*	#
		66	14	65	6	0.85	3.80	0.36	5.9	1507		
	Dandy	62	22	55	1	1.21	3.08	0.07	5.6	1310		
		64	15	66	4	0.83	3.73	0.22	5.6	1436		
		66	13	68	6	0.87	4.60	0.40	6.8	1766	*	#
	Teseo	64	13	55	19	0.56	2.43	0.83	4.4	1152		#
		66	7	49	33	0.49	3.04	2.07	6.2	1693	*	
	Banquet	64	25	44	6	0.96	1.70	0.25	3.9	875		
		66	15	63	6	0.76	3.19	0.33	5.1	1288		#
		69	5	50	40	0.33	3.44	2.72	6.9	1960	*	

Table 5. Performance of small sieve green bean varieties, Corvallis, 1992 (cont.).

Trial	Variety	Days	Percent			Tons/Acre				\$/Acre ³	*	#
			2 ¹	3	4	2	3	4	Total ²			
4 June 4	5446	60	18	48	16	1.03	2.79	0.91	5.8	1428		
		62	13	50	19	0.92	3.59	1.34	7.1	1795	*	#
		64	8	50	24	0.56	3.48	1.63	6.9	1785		
		67	4	35	40	0.36	3.08	3.55	8.9	2282		
	76-110	63	12	63	13	0.62	3.23	0.65	5.1	1348		
		64	11	61	17	0.63	3.44	0.94	5.6	1510	*	#
		67	11	52	25	0.63	3.04	1.45	5.8	1543		
	Dandy	62	17	63	2	0.98	3.62	0.14	5.8	1425		
		64	13	68	6	0.85	4.42	0.36	6.5	1691		
		67	10	70	10	0.74	5.22	0.76	7.5	2017	*	#
	Teseo	63	8	40	36	0.42	2.18	1.96	5.4	1413		
		64	8	39	35	0.47	2.36	2.14	6.0	1564	*	#
		67	7	34	34	0.45	2.07	2.10	6.2	1513		
	Banquet	64	18	52	11	0.83	2.36	0.51	4.5	1109		
		67	14	53	18	0.85	3.30	1.12	6.2	1591		#
69		8	50	31	0.54	3.41	2.14	6.9	1857	*		
5 June 16	5446	57	14	57	15	0.65	2.76	0.72	4.8	1244		#
		59	9	48	28	0.60	3.19	1.88	6.6	1745	*	
		62	4	43	34	0.33	3.19	2.50	7.4	1931		
	76-110	62	16	63	5	0.72	2.79	0.22	4.5	1120		#
		64	6	54	30	0.27	2.61	1.45	4.8	1326	*	
		66	4	40	41	0.24	2.18	2.25	5.4	1463		
	Dandy	57	36	27	0	1.36	1.02	0.00	3.7	712		
		59	20	60	0	1.09	3.30	0.00	5.5	1316		
		62	13	70	5	0.89	4.78	0.33	6.9	1800	*	#
	Teseo	62	13	58	16	0.65	2.86	0.80	5.0	1294		#
		64	5	42	43	0.31	2.39	2.43	5.7	1569		
		66	2	34	48	0.14	2.50	3.55	7.4	1986	*	
	Banquet	62	25	50	0	0.89	1.81	0.00	3.6	810		
		64	6	66	22	0.31	3.55	1.20	5.4	1517	*	#
		66	4	48	42	0.24	2.68	2.36	5.6	1595		
6 June 26	5446	54	17	51	14	0.58	1.70	0.47	3.3	826		
		56	10	53	23	0.49	2.54	1.12	4.8	1267		#
		59	5	41	31	0.27	2.18	1.63	5.3	1332		
		61	5	40	32	0.34	2.72	2.14	6.8	1695	*	
	76-110	59	19	54	7	0.49	1.41	0.18	2.6	629		
		61	19	52	9	0.71	1.92	0.33	3.6	890		
		63	12	56	17	0.60	2.76	0.83	4.9	1273	*	#

Table 5. Performance of small sieve green bean varieties, Corvallis, 1992 (cont.).

Trial	Variety	Days	Percent			Tons/Acre				\$/Acre ³			
			2 ¹	3	4	2	3	4	Total ²				
6 June 26 (cont.)	Dandy	54	17	64	1	0.53	1.96	0.04	3.0	756			
		56	13	70	3	0.60	3.12	0.14	4.5	1158			
		59	10	66	12	0.45	2.90	0.54	4.4	1173			
		61	9	72	9	0.49	3.88	0.51	5.4	1467	*	#	
	Teseo	57	16	35	22	0.22	0.47	0.29	1.3	311			
		59	20	32	18	0.40	0.65	0.36	2.0	450			
		61	13	49	17	0.54	1.99	0.69	4.1	1007		#	
		63	7	46	27	0.31	2.10	1.23	4.6	1166	*		
	Banquet	61	32	36	0	0.63	0.72	0.00	2.0	408			
		63	16	64	5	0.72	2.97	0.22	4.6	1174	*	#	
	7 July 8	5446	58	33	33	1	1.32	1.31	0.04	4.0	799		
			61	19	55	6	1.00	2.83	0.33	5.1	1245		
63			10	61	18	0.60	3.73	1.12	6.2	1649		#	
65			6	48	32	0.53	4.06	2.72	8.5	2274	*		
76-110		61	39	21	0	1.00	0.54	0.00	2.5	462			
		63	17	61	4	0.54	1.96	0.14	3.2	794		#	
		65	10	57	9	0.49	2.65	0.44	4.7	1145	*		
Dandy		58	35	29	0	1.63	1.34	0.00	4.6	892			
		61	18	46	1	1.25	3.23	0.07	7.1	1364			
		63	7	82	5	0.42	5.00	0.29	6.1	1713		#	
		65	4	77	14	0.33	5.62	1.05	7.3	2098	*		
Teseo		61	30	36	4	0.60	0.72	0.07	2.0	419			
		63	9	48	27	0.31	1.67	0.94	3.4	902			
		65	7	51	35	0.31	2.18	1.49	4.3	1191	*	#	
Banquet		63	23	47	4	0.38	0.76	0.07	1.6	368			
		65	9	64	18	0.45	3.26	0.91	5.1	1391		#	
		68	6	55	30	0.42	3.55	1.92	6.5	1789	*		

¹2 sieve values calculated as 50% of the combined 1 + 2 sieve weights from grader.

²Total weight of graded beans, including sieve sizes 1-5.

³\$/acre based on \$300/ton for 2-4 sieve; \$120/ton for 5 sieve.

* Harvest which produced the highest tons/acre of 3-sieve pods.

Harvest which produced the highest percentage of 3-sieve pods.

Table 6. Fusarium root rot infection, Corvallis, 1992.

Line	Score ¹			Notes
	Rep 1	Rep 2	Avg.	
B7239-11-3	4	3.5	3.8	
B7239-11-4	3.5	4	3.8	
B7239-12	4	3	3.5	
B7239-13	1.5	4.5	3.0	
B7240-2	3	3.5	3.2	
B7243-8	3	2	2.5	
DM3 NY1	3	2	2.5	
DM4 NY6	2	1.5	1.8	
DM6 NY1	2.5	1	1.8	
RR4270	2.5	3.5	3.0	
RR6950 ²	0.5	0.8	0.7	
WIS46RR	3.5	2.5	3.0	
WIS83RR	2.5	3.0	2.8	
5256	4.5	4.5	4.5	
5402	2.5	3.5	3.0	
5416	4.5	3	3.8	
5421	4.5	4.5	4.5	
5445	4	2	3	
5446	4.5-5	4.5	4.5	
5463	4	2.5	3.3	
5497	4.5	4	4.3	
5545	3.5	3.5	3.5	
5558	4	4	4	
5566	4.5	4	4.3	
91G ²	3.5	3.5	3.5	
Easy Pick	3	3	3	

¹Scores: 1-5 scale, 1 = none or very slight, 5 = roots mostly dead.

²Each value is an average of 2 plots.

Table 7. White mold infection, Corvallis, 1992.¹

Line	Rep 1	Rep 2	Rep 3	Rep 4	Avg.
91G	6	7	4	2	5.0
5256	5	4	4	6	4.75
5402	4	7	8	4	5.75
5416	3	7	5	5	5.0
5421	7	9	9	7	8.0
5445	5		4	6	5.0
5446	6	6	2	6	5.0
5463	3	5	1	4	3.25
5497	2	8	5	3	4.5
5545	8	10	6	1	6.25
5558	2	6	4	1	3.25
5566	5	7	5	5	5.5
B7239-11-3	2	3	1	6	3
B7239-11-4	6	3	4	5	4.5
B7239-12	1	4	4	1	2.5
B7240-2	4	6	5	5	5
B7243-8	8	7	2	7	6
169787	8	1	1	1	2.75
180753	4	1	1	3	2.25
204717	1	1	1	2	1.25
225846	3	1	1	2	1.75
226865	1	1	1	2	1.25
824775	3	1	1	1	1.5
DM3 NY1	6	4	5	7	5.5
DM4 NY6	4	4	1	6	3.75
DM6 NY1	8	7	6	4	6.25
Tendercrop	4	8	3	2	4.25
Black Turtle	7	5	7	5	6

Table 7. White mold infection, Corvallis, 1992 (cont.).¹

Line	Rep 1	Rep 2	Rep 3	Rep 4	Avg.
Mo 162	1	2	1		1.33
3525	5	7	2	1	3.75
Ex Rico	4	5	5	4	4.5
Gabriella	8	3	3	4	4.5
LI92	1	1	1	1	1
2235	4	2	3	3	3
Red Kidney	3	1	1	5	2.5
Aurora	9	2	2	6	4.75
Dwarf Horticultural	2	1	1	5	2.25
Black Valentine	7	3	6	5	5.25
Easy Pick	9	9	1	5	6

¹White mold scores, 1-10 scale, 1 = low incidence, sometimes slight symptoms, 10 = high incidence, usually severe symptoms.