

Dry Pea, Lentil, Chickpea and Winter Legume Breeding

2009 Progress Report



Prepared by
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SPRING PEA YIELD TRIALS

In 2009, 19 advanced breeding lines and seven check varieties of green peas were tested in the advanced yield trials. Identical trials were planted in Pullman, Fairfield and Kendrick, Washington and in Genesee, Idaho. The mean yields at the four locations were: Pullman: 1883 kg/ha; Fairfield: 2556 kg/ha; Kendrick: 1431 kg/ha; and Genesee: 2323 kg/ha. 2009 was the second year of advanced testing for most of the advanced lines and the first year for two of the top ten (i.e. PS06100760 and PS06100490). Eighteen of the advanced breeding lines and six of the checks had significantly higher yields than did Columbian. Yields of the advanced lines ranged from 1797-2322 kg/ha, the average yields of the check cultivars ranged from 1611 kg/ha (Columbian) to 2209 kg/ha (Lifter). Seed size of the check cultivars ranged from 12.7 g/100sd (Ariel) to 17.8 g/100sd (Lifter). Seed size of the advanced breeding lines ranged from 14.5-20.4 g/100sd. The earliest check (Columbian) and the earliest breeding line (PS05100632) both flowered at 40 days.

Fourteen breeding lines and four check varieties were evaluated in the yellow pea advanced yield trials. Identical trials were planted in Pullman, Fairfield and Kendrick, Washington and in Genesee, Idaho. The mean yields at the four locations were: Pullman: 1984 kg/ha; Fairfield: 2705 kg/ha; Kendrick: 1499 kg/ha; and Genesee: 2256 kg/ha. 2009 was the first year of advanced testing for six of the breeding lines, including the highest yielding entry (PS06101119). All entries had significantly higher yields than the check Delta. Yields of the advanced lines ranged from 1876 kg/ha to 2332 kg/ha, the average yields of the check cultivars ranged from 1782 kg/ha (Delta) to 2193 kg/ha (Carousel). Seed size of the check cultivars ranged from 19.2 g/100sd (Carousel) to 20.5 g/100sd (DS Admiral). Seed size of the advanced breeding lines ranged from 18.1-23.7 g/100sd. The earliest check (Universal) flowered in 43 days, the earliest breeding line (PS06101346) flowered in 42 days.

The 2009 preliminary yield trials were planted in Pullman. The green trial consisted of 20 breeding lines and four checks. Eight green pea breeding lines had yields significantly greater than the commercial check, Aragorn. Seed weight among the green breeding lines ranged from 15.2 to 21.6 g/100sd. The seed weight of the checks ranged from 17.0 g/100sd (Medora) to 19.8 g/100sd (Lifter). Stirling, the earliest check variety, flowered in 42 days; two breeding lines, PS07100056 and PS07100130, flowered in 40 days. The yellow preliminary yield trial consisted of 16 breeding lines and two checks. Nine lines had yields significantly greater than either of the checks (Delta and Universal). Seed weight among the yellow breeding lines ranged from 18.9 to 24.9 g/100sd. The seed weight of the check varieties was 17.7 g/100sd (Delta) and 18.1 g/100sd (Universal). Universal was the first entry to flower (42 days), PS07100828 was the first breeding line to flower (43 days).

The breeding lines were evaluated for resistance to Pea Enation Mosaic Virus in Corvallis, Oregon and for resistance to Fusarium wilt, Race 1 in Pullman, Washington. The Aphanomyces root rot nursery in Pullman was out of rotation and not utilized. Breeding lines and segregating

families were screened in pure culture in the greenhouse for tolerance to *Aphanomyces* root rot. Within the segregating families (F₄ to F₆ families), tolerant individuals were selected and transplanted for crossing and generation advance.

Potential product quality of the green pea breeding lines was assessed visually. All entries in the green pea advanced and preliminary yield trials were subjected to a simulated high temperature, high humidity bleach test.

Potential Variety Releases

PS0310445 was identified in 2008 as a potential variety release. It is a semi-leafless spring green breeding line with that has been tested in 12 location/years of yield trials. The data in Table 1 provide comparisons of the performance of PS0310445 with Columbian, Aragorn and Banner.

Table 1. Comparison of the performance of PS0310445 with three commercial varieties in 12 location/years.

Entry	FW R1	PM	PEMV	Leaf	Days to Flr	Days to Mat	Vine Lgth (cm)	Plnt Ht (cm)	Sd Wt (g/100sd)	Yield (kg/ha)
PS0310445	R	S	S	af	57	88	63	58	18.7	2163
Columbian	R	R	S	Af	46	88	99	38	18.7	1630
Aragorn	R	R	S	af	54	86	67	64	18.5	2022
Banner	S	R	S	af	53	86	75	59	17.8	2040

PS03101822 was identified in 2008 as a potential variety release. It is a semi-leafless spring yellow pea breeding line. It has been evaluated in 12 location/years of yield trials. The data in Table 2 provide comparisons of the performance of PS03101822 with Carousel, Universal, DS Admiral and Delta.

Table 2. Comparison of the performance of PS03101822 with four commercial varieties in 12 location/years.

Entry	FW R1	PM	PEMV	Leaf	Days to Flr	Days to Mat	Vine Lgth (cm)	Plnt Ht (cm)	SdWt (g/100sd)	Yield (kg/ha)
PS03101822	R	S	S	af	51	84	57	49	22.5	2468
Carousel	S		S	af	52	86	69	65	21.7	2148
Universal		R	S	af	51	84	64	61	20.7	2264
DS Admiral	S	S	S	af	54	85	68	65	20.8	2313
Delta	R	R	S	af	54	84	57	57	20.5	2056

In 2010, performance of PS03101445 and PS03101822 will be evaluated in multiple locations and breeder's seed will be made. We anticipate releasing these two varieties in 2010-2011. Several other varieties in both the green and yellow trials displayed exceptional performance and potential; however, they have been in trials for only 1-2 years and must be evaluated across more location/years. Please refer to the attached data sheets.

Location Yield Summary for the Green Pea Advanced Yield Trial (0901)

Name	Leaf Type	Vine Type	Fairfield Seed Yield kg/ha	Genesee Seed Yield kg/ha	Kendrick Seed Yield kg/ha	Pullman Seed Yield kg/ha	Mean Seed Yield kg/ha	% of Columbian
PS06100760	-	-	3130.40	2482.50	1641.60	2035.20	2322.40	144
PS05100840	-	-	2702.10	2691.00	1622.00	2069.40	2271.10	141
PS06100490	-	-	2674.70	2585.80	1633.00	2002.30	2224.00	138
LIFTER	+	-	2565.60	2069.90	1532.70	2669.20	2209.40	137
PS05100632	-	-	2503.20	2707.10	1643.40	1897.70	2187.90	136
PS04100462	-	-	2723.80	2317.60	1459.40	2157.30	2164.50	134
PS03101445	-	-	2535.20	2386.30	1601.60	2108.00	2157.80	134
PS05100736	-	-	2717.40	2816.10	1076.20	1982.10	2148.00	133
PS05100120	-	-	2577.30	2263.10	1569.20	2113.50	2130.80	132
PS05100522	-	-	2403.10	2484.80	1688.20	1784.20	2090.10	130
PS05100735	-	-	2612.50	2629.10	1266.10	1776.90	2071.20	129
PS06100542	-	-	2619.20	2267.20	1396.10	1970.30	2063.20	128
PS05100728	-	-	2540.10	2193.10	1327.70	2185.90	2061.70	128
PS06100617	-	-	2868.40	2533.80	1208.80	1609.50	2055.10	128
PS05100627	-	-	2413.60	2355.30	1603.00	1834.10	2051.50	127
PS05100727	-	-	2318.80	2423.80	1352.90	2068.70	2041.10	127
ARAGORN	-	-	2502.70	2529.00	1349.30	1718.10	2024.80	126
PS06100292	-	-	2622.80	2232.60	1410.90	1816.30	2020.70	125
PS06100595	-	-	2374.60	2549.60	1328.00	1802.90	2013.80	125
PS05100670	-	-	2502.20	1991.20	1403.70	2138.00	2008.80	125
ARIEL	-	-	2464.10	2208.80	1536.70	1650.00	1964.90	122
STIRLING	-	-	2637.60	1908.60	1249.70	1800.50	1899.10	118
BANNER	-	-	2421.80	2328.80	1563.70	1219.40	1883.40	117
PS04100505	-	-	2499.40	1784.60	1245.80	1658.90	1797.20	112
MEDORA	-	-	2526.00	2194.00	1233.70	1176.10	1782.50	111
COLUMBIAN L1	+	+	1997.40	1471.40	1273.60	1703.40	1611.50	100
GRAND MEAN			2555.93	2323.27	1431.42	1882.62	2048.31	0.00
CV			6.72	10.82	14.14	15.88	11.53	0.00
LSD			235.23	343.99	277.11	409.25	190.09	0.00

Leaf Type: + = normal leaf, - = afila or semi-leafless type.

Plant Type: + = tall plant type, - = short plant type

Yield data are means of three replications at each location.

Agronomic Data for the Green Dry Pea Advanced Yield Trial (0901)

Name	FW 1	PM	PEMV	Days to Flower	Days to Maturity	Flower Node	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	# Repr Nodes	100 Seed Weight ..g..
PS06100760	+	-	-	45.00	78.00	18.30	2.00	49.00	36.70	0.75	64.80	57.50	0.89	2.80	15.20
PS05100840	+	-	-	49.00	79.00	20.70	2.00	63.00	39.30	0.63	75.30	62.70	0.83	2.80	15.20
PS06100490	+	+	-	42.00	75.00	15.20	2.00	50.00	28.50	0.57	65.80	47.80	0.73	3.20	18.20
LIFTER	+	-	+	47.00	80.00	16.50	2.00	57.80	11.70	0.20	83.80	27.20	0.32	4.20	17.80
PS05100632	+	+/-	-	40.00	76.00	15.00	2.00	54.50	32.00	0.58	75.70	67.20	0.88	4.00	14.50
PS04100462	+	-	+	50.00	80.00	14.50	2.00	47.80	30.30	0.63	61.20	54.00	0.88	2.30	18.80
PS03101445	+	-	-	46.00	78.00	16.00	2.00	49.70	31.50	0.64	66.80	56.00	0.84	3.70	15.40
PS05100736	+	-	+	49.00	79.00	17.70	2.00	48.20	32.50	0.66	62.00	50.20	0.81	2.30	18.50
PS05100120	+	-	+	48.00	80.00	19.80	2.00	56.30	27.80	0.49	72.70	49.70	0.68	3.50	15.50
PS05100522	+	-	-	42.00	74.00	14.80	2.00	49.70	32.80	0.66	68.00	57.80	0.85	3.50	18.40
PS05100735	+	-	+	49.00	81.00	16.20	2.00	45.70	26.30	0.59	59.70	50.00	0.84	2.70	20.40
PS06100542	+	+	-	47.00	77.00	17.20	2.00	66.00	45.00	0.69	78.80	70.30	0.89	2.50	17.60
PS05100728	+	-	+	48.00	79.00	16.00	2.00	55.70	32.30	0.59	71.80	53.20	0.75	3.00	19.20
PS06100617	+	+	-	49.00	78.00	17.00	2.00	63.30	44.20	0.69	80.20	71.00	0.88	3.00	18.80
PS05100627	+	-	+	47.00	78.00	15.80	2.00	67.30	43.50	0.65	83.80	76.00	0.90	3.00	19.90
PS05100727	+	+/-	+	47.00	80.00	16.50	2.00	70.50	34.00	0.49	85.80	57.30	0.68	2.70	19.80
ARAGORN	+	+	-	44.00	74.00	18.70	2.00	52.50	39.50	0.75	68.80	58.80	0.86	3.00	15.00
PS06100292	+	-	-	47.00	74.00	17.70	2.00	57.80	36.20	0.63	73.20	59.20	0.81	3.00	14.60
PS06100595	+	+	-	42.00	77.00	13.50	2.00	53.00	31.70	0.61	70.20	52.30	0.75	2.80	18.90
PS05100670	+	-	+	48.00	81.00	16.80	2.00	49.30	31.00	0.63	65.70	61.50	0.90	4.20	18.30
ARIEL	+	+	-	47.00	77.00	18.00	2.00	48.80	35.30	0.73	67.20	58.80	0.88	3.80	12.70
STIRLING	+	-	-	43.00	77.00	16.20	2.00	38.20	23.00	0.61	49.70	44.00	0.88	2.70	15.70
BANNER	-	+	-	43.00	74.00	14.30	2.00	55.50	27.30	0.48	72.30	51.20	0.71	2.70	14.00
PS04100505	+	-	-	43.00	78.00	16.70	2.00	39.30	23.00	0.58	53.30	44.30	0.82	2.80	16.60
MEDORA	-	-	-	50.00	78.00	18.50	2.00	59.00	37.50	0.63	72.30	62.30	0.84	2.50	13.30
COLUMBIAN L1	+	+	-	40.00	80.00	10.00	1.00	33.30	9.80	0.31	103.2	32.30	0.32	6.30	16.30
GRAND MEAN				45.83	77.68	16.44	1.94	53.13	31.65	0.60	71.24	55.10	0.79	3.19	16.87

FW 1 = Fusarium wilt race 1; + = resistant; - = susceptible.

PM = Powdery Mildew; + = resistant; - = susceptible.

PEMV = Pea enation mosaic virus; + = resistant, - = susceptible

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the green pod height.

Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the green plant height at the green plant stage.

Rep Nodes = average number of reproducing nodes to a plant.

Agronomic data are means of three replications at Pullman, WA. Planting Date 05/18/09 Harvst Date: 08/10/09

Check variety = Columbian

Agronomic Data for the Green Dry Pea Advanced Yield Trial (0901)

Name	FW 1	PM	PEMV	Days to Flower	Days to Maturity	Flower Node	Pods/ Peduncle	Pod Height	Pod Ht Maturity	Pod Ht Index	Vine Length	Canopy Height	Plant Ht Index	# Repr Nodes	100 Seed Weight
								..cm..	..cm..		..cm..	..cm..			..g..
CV				2.85	2.48	12.21	8.35	9.25	18.14	16.97	8.74	12.20	9.88	17.35	7.48
LSD				1.79	2.64	2.75	0.22	6.73	7.85	0.14	8.52	9.20	0.11	0.76	1.73

FW 1 = Fusarium wilt race 1; + = resistant; - = susceptible.

PM = Powdery Mildew; + = resistant; - = susceptible.

PEMV = Pea enation mosiac virus; + = resistant, - = susceptible

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the green pod height.

Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the green plant height at the green plant stage.

Rep Nodes = average number of reproducing nodes to a plant.

Agronomic data are means of three replications at Pullman, WA. Planting Date 05/18/09 Harvst Date: 08/10/09

Check variety = Columbian

Mean Yields of the Green Dry Pea Advanced Yield Trial, 2005 - 2009

Name	Leaf Type	Plant Type	2005 kg/ha	2006 kg/ha	2007 kg/ha	2008 kg/ha	2009 kg/ha
PS06100760	-	-	...	...	...	...	2322
PS05100840	-	-	...	...	...	2015	2271
PS06100490	-	-	...	...	...	...	2224
LIFTER	+	-	2553	2068	2072	1774	2209
PS05100632	-	-	...	...	...	2016	2188
PS04100462	-	-	...	...	1991	1800	2165
PS03101445	-	-	...	...	...	1986	2158
PS05100736	-	-	...	...	...	2023	2148
PS05100120	-	-	...	...	...	2098	2131
PS05100522	-	-	...	...	...	1836	2090
PS05100735	-	-	...	...	...	1860	2071
PS06100542	-	-	...	...	...	...	2063
PS05100728	-	-	...	...	...	1849	2062
PS06100617			...	...	...	...	2055
PS05100627	-	-	...	...	...	1927	2052
PS05100727	-	-	...	...	...	2026	2041
ARAGORN	-	-	...	2208	1999	1850	2025
PS06100292	-	-	...	...	...	...	2021
PS06100595			...	...	...	...	2014
PS05100670	-	-	...	...	...	1749	2009
ARIEL	-	-	...	2242	1958	2044	1965
STIRLING	-	-	2608	2200	2014	1839	1899
BANNER	-	-	...	...	...	1959	1883
PS04100505	-	-	...	...	2042	1851	1797
MEDORA	-	-	...	1626	1307	1962	1783
COLUMBIAN(L	+	+	2003	2019	2007	1604	1612
Grand Mean			2238	2222	1929	1867	2048
LSD ($\alpha=0.05$)			215	193	186	191	190.1

Leaf type; + = normal leaf, - = *afila* or semileafless type.

Plant type; + = tall plant type, - = short plant type.

Yield data are means of three replications at each location, over four locations in each year except 2005 and 2006.

Location Yield Summary for the Yellow Pea Advanced Yield Trial (0902)

Name	Leaf Type	Vine Type	Fairfield Seed Yield kg/ha	Genesee Seed Yield kg/ha	Kendrick Seed Yield kg/ha	Pullman Seed Yield kg/ha	Mean Seed Yield kg/ha	% of Delta
PS06101119	-	-	2698.40	2397.50	1887.40	2342.60	2331.50	131
PS03101822	-	-	2766.80	2683.30	1544.50	2284.80	2319.90	130
PS04100710	-	-	2747.60	2384.60	1583.00	2378.30	2273.40	128
PS06101240	-	-	2915.40	2350.90	1755.20	2042.20	2265.90	127
PS06101043	-	-	2837.20	2296.00	1617.20	2207.10	2239.40	126
CAROUSEL	-	-	2818.00	2482.20	1668.00	1803.10	2192.80	123
PS06101004	-	-	2572.90	2261.60	1505.80	2293.10	2158.40	121
PS05101142	-	-	2808.90	2297.70	1436.30	2064.80	2151.90	121
PS02101137	-	-	2842.80	2133.40	1419.60	2190.40	2146.60	120
UNIVERSAL	-	-	2553.80	2472.10	1633.20	1838.00	2124.30	119
PS05101139	-	-	2533.70	2358.50	1462.50	2139.90	2123.70	119
PS06101338	-	-	2560.70	2443.60	1446.90	1835.10	2071.60	116
DS ADMIRAL	-	-	2773.30	2427.50	1311.90	1700.00	2053.20	115
PS06101065	-	-	2630.30	2128.40	1474.60	1841.00	2018.60	113
PS04100922	-	-	2673.80	2129.00	1320.10	1717.00	1960.00	110
PS06101346	-	-	2619.30	1795.00	1509.90	1714.90	1909.80	107
PS05101240	-	-	2794.00	1838.70	1262.20	1608.00	1875.70	105
DELTA	-	-	2541.40	1735.90	1139.90	1708.60	1781.50	100
GRAND MEAN			2704.91	2256.44	1498.79	1983.84	2110.99	0.00
CV			5.78	8.54	7.62	16.61	10.14	0.00
LSD			215.92	266.35	157.73	455.07	172.80	0.00

Leaf Type: + = normal leaf, - = afila or semi-leafless type.

Plant Type: + = tall plant type, - = short plant type

Yield data are means of three replications at each location.

Agronomic Data for the Yellow Pea Advanced Yield Trial (0902)

Name	FW 1	PM	PEMV	Days to Flower	Days to Maturity	Flower Node	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	# Repr Nodes	100 Seed Weight ..g..
PS06101119	+	-	-	47.00	78.00	16.30	2	52.80	31.80	0.60	71.50	55.30	0.78	3.80	23.20
PS03101822	+	-	-	45.00	75.00	14.00	2	43.00	29.80	0.69	57.80	51.80	0.90	3.00	20.90
PS04100710	+/-	+/-	-	48.00	78.00	17.00	2	51.20	33.30	0.67	63.70	49.50	0.80	2.50	21.20
PS06101240	+/-	-	-	52.00	85.00	17.70	2	50.50	38.30	0.76	63.80	58.30	0.91	3.50	20.90
PS06101043	+	+	-	47.00	78.00	18.00	2	66.80	35.20	0.52	85.20	64.80	0.76	3.70	23.30
CAROUSEL	-	+/-	-	44.00	78.00	17.00	2	60.00	38.50	0.64	77.80	66.00	0.84	3.70	19.20
PS06101004	+	-	-	45.00	77.00	15.20	2	53.80	37.50	0.69	70.20	60.70	0.86	3.80	23.50
PS05101142	+	-	-	48.00	78.00	17.70	2	60.70	39.00	0.65	81.30	57.80	0.72	4.70	19.40
PS02101137	+	-	-	48.00	78.00	18.00	2	56.20	38.00	0.68	68.20	63.80	0.94	2.50	20.80
UNIVERSAL	+/-	+	-	43.00	74.00	14.80	2	51.20	34.00	0.67	68.20	57.00	0.84	2.80	19.40
PS05101139	+	-	-	44.00	78.00	18.30	2	66.20	36.80	0.55	84.00	63.70	0.75	3.50	21.40
PS06101338	+/-	-	-	47.00	78.00	16.00	2	68.70	55.00	0.80	86.20	80.70	0.93	3.80	22.70
DS ADMIRAL	-	-	-	48.00	76.00	17.20	2	56.50	40.20	0.71	72.00	67.20	0.93	3.80	20.50
PS06101065	+	+	-	47.00	80.00	19.70	2	68.70	44.20	0.64	82.80	62.20	0.75	2.80	21.30
PS04100922	+	-	-	49.00	78.00	14.20	2	42.80	32.80	0.76	54.30	47.00	0.85	2.30	19.90
PS06101346	+	+	-	42.00	78.00	14.80	2	56.80	35.20	0.61	74.80	65.70	0.88	4.30	23.70
PS05101240	+	-	-	49.00	78.00	18.50	2	48.70	36.20	0.73	61.20	56.50	0.92	2.50	18.10
DELTA	+	+	-	47.00	76.00	16.30	2	50.70	29.80	0.59	61.50	54.30	0.88	2.50	19.60
GRAND MEAN				46.70	77.72	16.70	2	55.84	36.98	0.67	71.36	60.13	0.85	3.31	21.05
CV				3.63	1.43	6.10	2	9.24	18.07	17.46	8.90	11.10	10.57	25.57	3.90
LSD				2.34	1.54	1.41	2	7.12	9.23	0.16	8.77	9.22	0.12	1.17	1.13

FW 1 = Fusarium wilt race 1; + = resistant; - = susceptible.

PM = Powdery Mildew; + = resistant; - = susceptible.

PEMV = Pea enation mosaic virus; + = resistant, - = susceptible

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the pod height at the green pod stage.

Plant height was measured at the green pod stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the plant height at the green pod stage.

Rep Nodes = average number of reproducing nodes to a plant.

Agronomic data are means of three replications at Pullman, WA. Planting Date 05/18/09 Harvest Date: 08/10/09

Check variety = Delta

Mean Yields of the Yellow Dry Pea Advanced Yield Trial, 2005 - 2009

Name	Leaf Type	Plant Type	2005	2006	2007	2008	2009
			kg/ha	kg/ha	kg/ha	kg/ha	kg/ha
PS06101119	-	-	...	...	...	...	2332
PS03101822	-	-	...	2976	2207	2235	2320
PS04100710	-	-	...	...	2013	1819	2273
PS06101240	-	-	...	...	...	...	2266
PS06101043	-	-	...	...	...	...	2239
CAROUSEL	-	-	...	2594	1420	2130	2193
PS06101004	-	-	...	...	...	...	2158
PS05101142	-	-	...	...	...	1991	2152
PS02101137	-	-	2213	2413	2034	2254	2147
UNIVERSAL	-	-	...	2547	2111	2271	2124
PS05101139	-	-	...	...	...	1939	2124
PS06101338	-	-	...	...	...	...	2072
DS ADMIRAL	-	-	...	...	1661	1762	2053
PS06101065	-	-	...	...	...	...	2019
PS04100922	-	-	...	...	1796	1834	1960
PS06101346	-	-	...	...	...	...	1910
PS05101240	-	-	...	...	...	2044	1876
DELTA*	-	-	2641	2419	1972	2116	1782
Grand Mean					1917	2013	2111
LSD _(α=0.05)					267	175	173

Leaf type; + = normal leaf, - = afila or semileafless type.

Plant type; + = tall plant type, - = short plant type.

Yield data are means of three replications at each location, over four locations in each year except 2005 and 2006.

Agronomic and Yield Data for the Green Dry Pea Preliminary Yield Trial (0903)

Name	Leaf Type	Vine Type	FW 1	PM	PEMV	Days to Flower	Days to Maturity	Flower Node	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	# Repr Nodes	100 Seed Weight ..g..	Seed Yield kg/ha	% of Stirling
PS07100396	-	-	-	-		47.00	78.00	19.00	2.00	63.70	45.50	0.71	75.30	69.00	0.91	2.70	16.30	2530	155.3
PS07100474	-	-	+	-	-	49.00	79.00	20.30	2.00	53.70	42.30	0.78	63.80	62.20	0.96	2.00	19.60	2416	148.3
PS07100480	-	-	+	-		49.00	80.00	18.70	2.00	70.00	47.20	0.67	86.80	77.00	0.89	4.30	20.10	2414	148.2
PS07100471	-	-	+	-		49.00	79.00	19.50	2.00	57.30	41.70	0.73	69.80	64.50	0.92	2.80	19.60	2389	146.6
PS07100470	-	-	+	-		47.00	78.00	17.70	2.00	56.80	41.20	0.72	69.70	61.20	0.87	2.50	15.20	2326	142.8
LIFTER	+	-	+	-	+	47.00	80.00	16.30	2.00	59.20	13.30	0.23	82.70	31.30	0.38	4.50	19.80	2280	139.9
PS07100262	-	-	+/-	-		44.00	76.00	15.30	2.00	41.80	27.70	0.66	54.30	46.70	0.86	2.70	19.20	2260	138.7
PS07100056	-	-	+	-		40.00	77.00	14.30	2.00	47.80	32.00	0.67	63.50	60.20	0.92	3.70	19.40	2241	137.6
PS07100170	-	-	+	-		49.00	78.00	18.00	2.00	69.50	49.20	0.71	82.30	74.30	0.90	2.50	20.90	2229	136.8
PS07100196	-	-	+	-	-	49.00	79.00	18.20	2.00	66.00	39.00	0.60	77.50	56.50	0.74	2.30	21.60	2146	131.7
PS07100192	-	-	+	-		46.00	77.00	19.30	2.00	59.70	43.70	0.74	71.20	62.70	0.89	3.30	16.60	2043	125.4
PS07100482	-	-	+/-	+	-	44.00	79.00	16.50	2.00	44.80	30.80	0.69	56.30	51.50	0.92	2.30	20.10	2026	124.4
PS07100130	-	-	+	-		40.00	71.00	14.80	2.00	53.70	34.70	0.65	65.80	64.50	0.97	3.00	17.00	1991	122.2
PS07100212	-	-	+/-	-		48.00	78.00	18.70	2.00	75.30	38.80	0.52	89.50	63.30	0.71	3.00	20.90	1972	121.0
PS07100403	-	-	+	+	-	52.00	80.00	17.50	2.00	46.70	30.70	0.66	56.20	55.20	0.94	2.20	17.60	1956	120.1
PS07100448	-	-	+	-	-	45.00	79.00	17.00	2.00	66.50	43.80	0.66	79.50	72.70	0.91	2.50	26.60	1900	116.6
ARAGORN	-	-	+	+	-	45.00	74.00	17.30	2.00	55.20	42.50	0.77	72.80	64.70	0.89	3.80	18.60	1796	110.3
PS07100067	-	-	+	-	-	53.00	80.00	19.00	2.00	72.50	49.70	0.69	87.70	76.70	0.87	2.30	18.10	1729	106.1
PS07100091	+	-	-	-		48.00	78.00	17.30	2.00	55.80	29.30	0.53	73.00	51.20	0.70	3.20	18.00	1685	103.4
PS07100218	-	-	+	-		48.00	78.00	17.30	2.00	75.00	22.50	0.30	90.00	44.50	0.50	2.80	21.20	1685	103.4
STIRLING	-	-	+	-	-	42.00	78.00	16.50	2.00	45.30	26.80	0.59	60.30	51.00	0.85	3.70	17.80	1629	100.0
PS07100418	-	-	+	-	-	49.00	79.00	18.00	2.00	57.30	40.50	0.71	66.80	63.70	0.92	2.00	21.00	1596	97.95
PS07100406	-	-	-	-		45.00	77.00	19.20	2.00	67.00	25.50	0.38	78.70	51.50	0.66	3.00	18.10	1487	91.30
MEDORA	-	-	-	-	-	50.00	79.00	19.70	2.00	62.20	52.50	0.86	73.80	72.00	0.96	2.20	17.00	1394	85.56
GRAND						46.83	77.96	17.73	2.00	59.28	37.12	0.63	72.81	60.33	0.83	2.89	19.18	2005	0.00
CV						2.49	1.62	7.99	8.24	8.70	15.91	16.41	8.17	12.38	10.25	19.12	16.50	14.45	0.00
LSD						1.60	1.73	1.94	0.23	7.07	8.10	0.14	8.15	10.24	0.12	0.76	4.34	397.2	0.00

Leaf type = + = normal leaf, - = afila or semi-leafless type; Vine type = + = normal, - = short; FW1 = Fusarium wilt race 1; + = resistant, - = susceptible;

PM = Powdery Mildew, + = resistant, - = susceptible; PEMV = Pea enation mosaic virus, + = resistant, - = susceptible

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the pod height at the green pod stage.

Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the plant height at the green plant stage.

Rep Nodes = average number of reproducing nodes to a plant.

Agronomic data are means of three replications at Pullman, WA. Planting Date 05/18/09 Harvest Date: 08/14/09

Agronomic and Yield Data for the Yellow and Marrowfat Dry Pea Preliminary Yield Trial (0904)

Name	Leaf Type	Vine Type	FW 1	PM	PEMV	Days to Flower	Days to Maturity	Flower Node	Pods/ Peduncle	Pod Height	Pod Ht Maturity	Pod Ht Index	Vine Length	Canopy Height	Plant Ht Index	# Repr Nodes	100 Seed Weight	Seed Yield	% of Delta
										..cm..	..cm..		..cm..	..cm..			..g..	kg/ha	
PS07100627	-	-	+	-		47.00	77.00	15.80	2.00	46.20	14.30	0.31	63.30	31.20	0.49	4.00	20.30	2654	145.0
PS07100836	-	-	+			50.00	79.00	15.20	2.00	53.20	31.00	0.58	67.50	52.50	0.77	3.20	21.20	2491	136.1
PS07100680	-	-	+	-		49.00	79.00	16.00	2.00	39.70	28.20	0.71	49.50	44.30	0.90	2.20	23.80	2470	134.9
PS07100914	+	-	+			44.00	75.00	13.00	2.00	47.50	30.20	0.64	65.50	52.80	0.81	3.70	24.20	2390	130.5
PS07100828	-	-	+			43.00	74.00	15.00	2.00	47.20	33.00	0.70	67.00	51.50	0.78	3.70	24.90	2376	129.8
PS07100834	-	-	+			49.00	78.00	17.70	2.00	43.30	31.50	0.73	54.30	52.30	0.94	2.50	20.90	2348	128.3
PS07100888	-	-	+	-		48.00	78.00	18.20	2.00	48.50	34.20	0.72	59.30	52.50	0.89	3.00	22.60	2306	126.0
PS07100918	-	-	+			48.00	78.00	15.80	2.00	47.80	37.80	0.79	61.30	56.70	0.93	3.20	24.40	2298	125.6
PS07100716	-	-	+			49.00	78.00	19.50	2.00	61.50	48.20	0.78	73.80	74.50	0.98	2.80	21.50	2259	123.4
PS07100931	-	-	+/-	-		49.00	77.00	19.80	2.00	71.00	45.80	0.65	86.20	70.80	0.82	2.70	22.70	2183	119.2
PS07100671	+	-	+/-			48.00	78.00	17.50	2.00	54.30	35.20	0.65	69.30	60.80	0.88	2.50	20.10	2090	114.2
PS07100925	-	-	+	-		49.00	77.00	16.80	2.00	51.30	40.80	0.80	60.80	61.70	0.98	2.30	21.30	2048	111.9
PS07100860	-	-	-			48.00	76.00	15.80	2.00	44.00	29.00	0.66	55.80	50.70	0.91	2.50	22.10	1977	108.0
UNIVERSAL	-	-	+/-	+	-	42.00	71.00	16.00	2.00	52.00	42.80	0.83	68.30	62.50	0.92	3.30	18.10	1975	107.9
PS07100930	-	-	+	-		51.00	79.00	16.00	2.00	46.20	38.00	0.83	63.20	62.00	0.98	3.00	20.10	1903	104.0
PS01102958	-	-	+	-	-	49.00	75.00	17.50	2.00	45.50	35.30	0.78	55.80	53.80	0.95	2.50	18.90	1881	102.8
DELTA	-	-	+	+	-	46.00	72.00	17.70	2.00	45.50	35.70	0.78	57.20	58.80	0.95	2.50	17.70	1830	100.0
PS07100646	-	-	+	-		49.00	73.00	16.50	2.00	44.70	29.30	0.66	53.70	48.50	0.90	2.00	20.60	1695	92.62
GRAND MEAN						47.69	76.37	16.66	1.98	49.41	34.46	0.70	62.89	55.44	0.88	2.86	21.40	2176	0.00
CV						1.71	2.25	7.76	6.87	7.77	14.80	15.39	6.82	7.93	7.19	20.30	5.63	8.56	0.00
LSD						1.13	2.38	1.78	0.19	5.30	7.04	0.15	5.92	6.07	0.09	0.80	1.66	257.4	0.00

Leaf type = + = normal leaf, - = afila or semi-leafless type

Vine type = + = tall, - = short

FW 1 = Fusarium wilt race 1; + = resistant; - = susceptible.

PM = Powdery Mildew; + = resistant; - = susceptible.

PEMV = Pea enation mosaic virus; + = resist

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the pod height at the green pod stage.

Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the plant height at the green plant stage.

Rep Nodes = average number of reproducing nodes to a plant.

Agronomic data are means of three replications at Pullman, WA. Planting Date 05/18/09 Harvest Date: 08/14/09

Agronomic and Yield Data for the Green, Yellow and Marrowfat Dry Pea Observation Nursery (0905)

Name	Leaf Type	Vine Type	FW 1	PM	PEMV	Days to Flower	Days to Maturity	Flower Node	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	# Repr Nodes	100 Seed Weight ..g..	Seed Yield kg/ha	% of Stirling
PS08100139	-	-				49.00	89.00	16.00	2.00	57.50	37.00	0.64	85.50	51.50	0.60	6.00	27.30	3845	246.3
PS08100133	-	-				49.00	89.00	13.50	2.00	53.50	23.00	0.43	72.00	52.50	0.73	3.50	22.80	3749	240.1
PS08100655	-	-			-	42.00	81.00	19.00	2.00	63.50	33.50	0.53	78.00	70.00	0.90	3.50	21.70	3534	226.4
PS08100071	-	-			-	53.00	89.00	18.00	2.00	59.00	16.50	0.28	79.00	38.50	0.49	3.50	19.80	3515	225.1
PS08101085	-	-		-		44.00	74.00	12.00	2.00	44.00	38.00	0.86	79.50	57.50	0.72	6.50	26.70	3438	220.2
PS08100198	-	-				42.00	81.00	15.00	2.00	51.50	24.50	0.48	72.50	50.50	0.70	5.50	19.30	3435	220.0
PS08100069	-	-				49.00	81.00	18.00	2.00	52.00	25.00	0.48	73.00	45.50	0.62	2.50	22.20	3422	219.2
PS08100383	-	-			-	47.00	79.00	17.50	2.00	63.00	37.50	0.60	74.50	64.00	0.86	2.50	22.80	3394	217.4
PS08101001	-	-				46.00	81.00	17.50	2.00	67.50	50.00	0.74	84.50	79.00	0.93	4.00	25.50	3351	214.6
PS08101108	-	-				39.00	72.00	14.00	2.00	43.00	33.00	0.77	52.50	61.00	1.00	2.50	23.80	3339	213.9
PS08100094	-	-				49.00	79.00	19.50	2.00	46.00	37.50	0.82	65.00	55.50	0.85	5.00	24.30	3326	213.0
PS08100070	-	-				49.00	81.00	18.00	2.00	57.00	31.00	0.54	72.50	60.00	0.83	3.00	22.40	3298	211.2
PS08100226	-	-				47.00	79.00	15.00	2.00	44.50	31.00	0.70	62.50	53.00	0.85	5.50	19.90	3247	207.9
PS08101038	-	-				47.00	74.00	15.00	2.00	44.00	30.00	0.68	57.00	41.00	0.72	4.50	25.90	3240	207.5
PS08100585	-	-		-		42.00	81.00	20.50	2.00	59.50	23.00	0.39	67.00	59.00	0.88	2.50	20.70	3194	204.6
PS08101054	-	-				46.00	79.00	17.50	2.00	38.00	34.00	0.89	50.50	59.50	1.00	3.00	21.40	3169	203.0
PS08100387	+	-				49.00	79.00	15.00	2.00	57.00	10.50	0.18	77.50	25.00	0.32	2.50	24.90	3131	200.5
PS08100582	-	-		-		44.00	84.00	20.50	2.00	66.50	39.00	0.59	80.00	65.00	0.81	4.00	20.10	3119	199.7
PS08100084	-	-				49.00	89.00	21.00	2.00	57.00	59.00	1.00	70.50	82.50	1.00	4.50	23.80	3106	198.9
PS08101043	-	-				47.00	81.00	19.50	2.00	49.50	23.50	0.47	62.00	52.00	0.84	3.00	18.30	3076	197.0
PS08100941	-	-				47.00	81.00	19.00	2.00	63.00	41.50	0.66	81.00	80.50	0.99	4.50	24.50	3075	197.0
PS08101061	-	-				44.00	72.00	17.00	2.00	66.50	41.00	0.62	99.50	60.50	0.61	5.50	21.10	3055	195.6
PS08100677	-	-				49.00	81.00	18.50	2.00	35.00	27.50	0.79	42.00	43.00	1.00	2.00	20.80	2987	191.3
PS08100217	-	-				51.00	81.00	18.00	2.00	52.50	33.00	0.63	66.50	50.50	0.76	3.00	19.90	2979	190.8
PS08100606	-	-		-		49.00	81.00	12.00	2.00	58.00	27.50	0.47	73.00	54.00	0.74	5.50	20.50	2967	190.0
PS08100556	-	-				49.00	81.00	16.50	2.00	73.50	49.50	0.67	88.00	73.00	0.83	3.50	23.00	2924	187.3
PS08100743	-	-				42.00	72.00	13.00	2.00	46.00	37.00	0.80	78.50	74.00	0.94	4.50	17.80	2919	187.0

Leaf type = + = normal leaf, - = afila or semi-leafless type

Vine type = + = tall, - = short

FW 1 = Fusarium wilt race 1; + = resistant; - = susceptible.

PM = Powdery Mildew; + = resistant; - = susceptible.

PEMV = Pea enation mosaic virus; + = resist

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the pod height at the green pod stage.

Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the plant height at the green plant stage.

Rep Nodes = average number of reproducing nodes to a plant. This experiment is not replicated and the LSD is not meaningful.

Planting Date 05/18/09 Harvest Date: 08/14/09

Agronomic and Yield Data for the Green, Yellow and Marrowfat Dry Pea Observation Nursery (0905)

Name	Leaf Type	Vine Type	FW 1	PM	PEMV	Days to Flower	Days to Maturity	Flower Node	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	# Repr Nodes	100 Seed Weight ..g..	Seed Yield kg/ha	% of Stirling
PS08101021	-	-				39.00	74.00	15.50	2.00	47.50	24.00	0.51	57.50	53.50	0.93	2.50	20.60	2915	186.7
PS08101060	-	-				42.00	72.00	12.50	2.00	52.50	33.50	0.64	68.50	65.50	0.96	3.00	22.10	2888	185.0
PS08100984	+	-				47.00	81.00	17.00	2.00	74.50	29.00	0.39	106.5	54.50	0.51	5.00	19.10	2876	184.2
PS08100963	-	-				39.00	79.00	18.00	2.00	73.00	42.00	0.58	91.00	77.50	0.85	4.00	20.80	2875	184.1
PS08100721	-	-				49.00	84.00	19.50	2.00	72.00	23.50	0.33	85.00	46.50	0.55	2.50	19.60	2866	183.5
PS08100659	-	-				49.00	81.00	18.50	2.00	59.50	34.00	0.57	77.00	68.00	0.88	4.50	22.30	2859	183.1
PS08100374	-	-		+		49.00	81.00	16.50	1.00	50.50	29.00	0.57	57.50	47.00	0.82	2.50	24.20	2841	182.0
PS08101147	-	-			-	46.00	79.00	16.50	2.00	50.50	16.50	0.33	65.50	39.00	0.60	4.50	22.20	2841	182.0
PS08101030	-	-				44.00	72.00	13.50	2.00	46.00	29.50	0.64	58.50	50.50	0.86	4.00	21.70	2838	181.7
PS08100678	-	-				49.00	81.00	18.50	2.00	66.50	41.50	0.62	73.50	67.50	0.92	2.50	22.30	2831	181.3
PS08100197	-	-				51.00	81.00	18.00	2.00	51.00	12.00	0.24	60.00	36.50	0.61	2.00	21.70	2824	180.9
PS08101016	-	-				49.00	70.00	16.00	2.00	53.00	22.50	0.42	73.50	41.50	0.56	4.00	20.60	2823	180.8
PS08100996	-	-				46.00	72.00	16.50	2.00	48.00	34.50	0.72	65.00	54.00	0.83	3.50	20.60	2822	180.8
PS08100962	-	-				47.00	74.00	17.50	2.00	57.50	41.50	0.72	71.00	66.50	0.94	2.00	21.10	2799	179.3
PS08100304	-	-				44.00	79.00	15.00	2.00	69.00	16.00	0.23	92.50	43.50	0.47	4.00	22.80	2791	178.8
PS08100193	-	-				47.00	81.00	13.50	2.00	42.00	31.00	0.74	55.00	54.50	0.99	3.50	16.10	2773	177.6
PS08100630	-	-			-	49.00	81.00	20.00	3.00	80.00	55.50	0.69	94.00	74.00	0.79	3.00	20.40	2767	177.2
PS08101022	-	-				39.00	72.00	13.00	2.00	45.50	34.50	0.76	57.50	46.50	0.81	3.00	22.10	2761	176.8
PS08100085	-	-			-	54.00	89.00	20.00	2.00	66.50	41.50	0.62	79.00	67.00	0.85	3.00	21.60	2750	176.1
PS08100108	-	-			-	54.00	84.00	12.50	2.00	37.00	26.50	0.72	48.00	50.50	1.00	3.00	19.90	2747	175.9
PS08100213	-	-				47.00	81.00	13.00	2.00	30.00	25.50	0.85	60.00	48.00	0.80	4.50	19.90	2729	174.8
PS08101109	-	-				47.00	72.00	13.00	2.00	47.00	24.50	0.52	58.50	49.50	0.85	4.50	25.50	2729	174.8
PS08100236	-	-				47.00	79.00	14.00	2.00	40.50	28.50	0.70	64.50	52.00	0.81	4.00	25.60	2727	174.7
PS08101028	-	-				47.00	72.00	12.50	2.00	39.50	24.50	0.62	51.50	45.50	0.88	3.00	20.60	2691	172.3
PS08101004	-	-				46.00	72.00	21.50	2.00	60.00	60.50	1.00	74.00	64.50	0.87	3.00	23.10	2672	171.2
PS08100129	-	-				47.00	84.00	18.00	2.00	51.50	23.50	0.46	70.00	57.00	0.81	3.00	23.90	2640	169.1
PS08100729	-	-			-	39.00	81.00	20.00	2.00	65.50	51.00	0.78	77.00	81.00	1.00	3.00	20.90	2634	168.7

Leaf type = + = normal leaf, - = afila or semi-leafless type

Vine type = + = tall, - = short

FW 1 = Fusarium wilt race 1; + = resistant; - = susceptible.

PM = Powdery Mildew; + = resistant; - = susceptible.

PEMV = Pea enation mosaic virus; + = resist

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the pod height at the green pod stage.

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Planting Date 05/18/09 Harvest Date: 08/14/09

Agronomic and Yield Data for the Green, Yellow and Marrowfat Dry Pea Observation Nursery (0905)

Name	Leaf Type	Vine Type	FW 1	PM	PEMV	Days to Flower	Days to Maturity	Flower Node	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	# Repr Nodes	100 Seed Weight ..g..	Seed Yield kg/ha	% of Stirling
PS08100214	-	-				49.00	84.00	14.00	2.00	51.50	19.50	0.38	63.50	36.50	0.57	2.50	22.40	2606	166.9
PS08100860	-	-				52.00	81.00	17.00	2.00	45.00	29.00	0.64	59.00	54.00	0.92	3.00	21.30	2596	166.2
PS08100662	-	-				49.00	81.00	18.00	2.00	67.00	39.00	0.58	86.00	58.00	0.67	4.00	19.40	2582	165.4
PS08101169	-	-				42.00	74.00	17.00	2.00	44.00	33.00	0.75	58.00	54.50	0.94	3.50	20.40	2562	164.1
PS08101002	-	-				46.00	72.00	17.50	2.00	58.00	35.50	0.61	70.00	74.00	1.00	3.50	22.70	2557	163.8
PS08100068	-	-			-	51.00	83.00	14.50	2.00	45.50	36.00	0.79	63.50	56.00	0.88	4.00	18.60	2548	163.2
PS08101066	-	-				47.00	72.00	15.00	2.00	52.00	39.50	0.76	69.00	59.50	0.86	4.00	24.10	2545	163.0
PS08101071	-	-				42.00	77.00	12.50	2.00	46.00	33.00	0.72	65.50	60.50	0.92	4.50	26.10	2535	162.4
PS08101069	-	-				47.00	77.00	14.50	2.00	51.50	38.00	0.74	65.50	58.00	0.89	3.00	22.60	2524	161.7
PS08100776	-	-				51.00	81.00	11.50	1.00	32.50	29.50	0.91	65.50	56.50	0.86	7.00	20.60	2521	161.5
PS08101080	-	-				42.00	72.00	13.00	2.00	47.00	33.00	0.70	78.50	68.50	0.87	4.50	26.90	2500	160.1
PS08100090	-	-				56.00	89.00	21.00	2.00	61.50	23.00	0.37	74.00	59.00	0.80	4.00	22.80	2493	159.7
PS08101029	-	-				42.00	74.00	15.00	2.00	52.00	33.50	0.64	61.50	54.50	0.89	3.50	23.10	2489	159.4
PS08100215	-	-				49.00	84.00	15.50	2.00	50.50	35.00	0.69	62.00	63.50	1.00	3.00	21.10	2455	157.2
PS08100136	-	-				49.00	86.00	16.50	2.00	42.50	20.00	0.47	57.50	42.50	0.74	4.50	25.10	2433	155.8
PS08101179	-	-				42.00	74.00	17.50	2.00	52.00	29.50	0.57	65.00	47.00	0.72	3.50	22.20	2426	155.4
PS08100624	-	-			-	49.00	74.00	19.00	2.00	64.00	42.00	0.66	78.00	62.00	0.79	3.00	20.00	2413	154.6
PS08100934	-	-				47.00	81.00	16.50	2.00	47.00	34.00	0.72	53.00	60.00	1.00	4.00	22.20	2402	153.8
PS08100740	-	-				39.00	81.00	16.00	2.00	58.00	43.00	0.74	82.50	79.00	0.96	4.00	19.40	2371	151.8
PS08100685	-	-				39.00	81.00	20.00	2.00	60.00	20.00	0.33	73.00	41.00	0.56	4.00	23.30	2359	151.1
PS08101062	-	-			-	42.00	72.00	17.50	2.00	52.00	35.00	0.67	65.50	65.50	1.00	3.50	25.30	2356	150.9
PS08101159	-	-				39.00	81.00	17.50	2.00	63.00	32.00	0.51	72.50	45.50	0.63	2.50	19.30	2354	150.7
PS08100738	-	-				42.00	74.00	11.50	2.00	47.00	29.00	0.62	68.00	63.50	0.93	6.00	19.20	2331	149.3
PS08100088	-	-			-	55.00	89.00	22.50	2.00	67.00	48.00	0.72	79.00	78.00	0.99	3.00	22.10	2318	148.5
PS08100933	-	-				44.00	79.00	15.00	2.00	43.50	38.00	0.87	72.50	64.00	0.88	7.50	24.90	2295	147.0
PS08100747	-	-				47.00	70.00	20.00	2.00	81.00	49.00	0.60	93.50	84.00	0.90	2.50	18.60	2287	146.5
PS08101068	-	-				46.00	72.00	15.50	2.00	54.00	38.50	0.71	69.50	60.50	0.87	4.00	22.40	2260	144.8

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Planting Date 05/18/09 Harvest Date: 08/14/09

Agronomic and Yield Data for the Green, Yellow and Marrowfat Dry Pea Observation Nursery (0905)

Name	Leaf Type	Vine Type	FW 1	PM	PEMV	Days to Flower	Days to Maturity	Flower Node	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	# Repr Nodes	100 Seed Weight ..g..	Seed Yield kg/ha	% of Stirling
PS08100958	-	-				49.00	72.00	19.00	2.00	65.00	28.50	0.44	79.50	56.50	0.71	3.50	19.20	2247	143.9
PS08100744	-	-				42.00	72.00	19.00	2.00	76.00	37.50	0.49	88.50	92.00	1.00	2.50	19.40	2241	143.5
PS08100709	-	-			-	51.00	81.00	20.50	2.00	65.50	41.50	0.63	81.00	72.00	0.89	3.50	23.20	2220	142.2
PS08100117	-	-				42.00	84.00	14.50	2.00	44.00	24.00	0.55	65.50	27.50	0.42	4.00	22.60	2217	142.0
PS08100347	-	-			-	51.00	79.00	17.00	2.00	59.50	38.50	0.65	76.00	65.50	0.86	3.50	21.00	2197	140.7
PS08100930	-	-				44.00	74.00	16.00	2.00	48.50	24.50	0.51	59.00	57.00	0.97	3.50	25.50	2196	140.6
PS08100858	-	-				47.00	72.00	18.00	2.00	49.00	27.50	0.56	61.00	56.50	0.93	3.00	21.30	2192	140.4
PS08100561	-	-				49.00	84.00	18.50	2.00	69.50	37.00	0.53	83.00	72.00	0.87	3.50	20.10	2171	139.1
PS08101192	-	-				44.00	74.00	17.00	2.00	60.00	51.00	0.85	76.00	63.00	0.83	3.50	19.10	2169	138.9
PS08100945	-	-				49.00	77.00	16.50	2.00	53.00	41.50	0.78	69.50	65.00	0.94	3.00	23.70	2161	138.4
PS08100494	-	-			-	47.00	79.00	18.00	2.00	42.00	30.00	0.71	51.50	45.00	0.87	3.00	20.10	2150	137.7
PS08100773	-	-			-	42.00	84.00	10.50	2.00	40.50	34.00	0.84	70.00	61.00	0.87	6.50	19.30	2147	137.5
PS08100220	-	-			-	46.00	81.00	13.50	2.00	53.00	31.50	0.59	71.00	52.00	0.73	3.50	17.70	2118	135.6
PS08100763	-	-			-	49.00	81.00	17.00	2.00	66.50	41.50	0.62	79.00	75.00	0.95	2.50	18.80	2110	135.1
PS08101026	-	-				42.00	70.00	15.00	2.00	45.50	26.50	0.58	54.50	41.00	0.75	3.00	23.20	2107	135.0
PS08101242	-	-				39.00	70.00	16.00	2.00	46.00	30.00	0.65	55.50	51.50	0.93	3.00	18.60	2103	134.7
PS08101245						39.00	72.00	10.00	2.00	38.00	37.50	0.99	89.00	63.50	0.71	10.00	21.90	2072	132.7
PS08100397	-	-				46.00	79.00	15.50	2.00	56.50	25.00	0.44	68.50	45.00	0.66	3.50	21.80	2052	131.4
PS08100862	-	-				49.00	81.00	19.50	2.00	57.50	41.50	0.72	69.00	67.00	0.97	2.50	21.70	2047	131.1
PS08100471	-	-			-	39.00	79.00	19.00	2.00	43.50	34.00	0.78	50.00	54.00	1.00	2.00	26.90	2018	129.2
PS08100470	-	-			-	49.00	74.00	20.00	2.00	53.50	33.00	0.62	61.00	49.50	0.81	2.50	21.50	2001	128.2
PS08100772	-	-			-	39.00	81.00	19.00	2.00	72.50	41.50	0.57	86.50	76.50	0.88	2.50	18.80	1998	128.0
PS08101167	-	-				42.00	70.00	16.00	1.00	49.00	33.00	0.67	57.50	44.00	0.77	3.00	20.80	1982	126.9
PS08100888	-	-				44.00	72.00	19.00	2.00	63.50	31.50	0.50	72.00	50.50	0.70	2.50	19.30	1978	126.7
PS08101224	-	-				39.00	70.00	11.00	1.00	31.00	22.50	0.73	45.50	42.50	0.93	5.00	20.80	1968	126.1
PS08100751	-	-				49.00	72.00	19.00	2.00	75.00	52.00	0.69	90.00	92.50	1.00	2.50	16.50	1958	125.4
PS08100795	-	-				39.00	72.00	16.00	1.00	36.00	23.00	0.64	43.50	38.50	0.89	2.50	18.10	1947	124.7

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Name	Leaf Type	Vine Type	FW 1	PM	PEMV	Days to Flower	Days to Maturity	Flower Node	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	# Repr Nodes	100 Seed Weight ..g..	Seed Yield kg/ha	% of Stirling
PS08100680	-	-				47.00	74.00	17.50	2.00	63.00	36.50	0.58	73.50	50.50	0.69	2.50	18.30	1921	123.0
PS08100218	-	-				53.00	81.00	16.00	2.00	40.00	24.50	0.61	53.00	45.50	0.86	3.00	21.00	1915	122.6
PS08100407	-	-				44.00	72.00	16.50	2.00	64.50	29.50	0.46	77.50	51.00	0.66	3.50	23.00	1895	121.4
PS08100775	-	-				39.00	81.00	15.00	2.00	49.50	32.00	0.65	60.00	54.50	0.91	3.00	19.90	1893	121.2
PS08100940						47.00	81.00	19.50	2.00	61.50	28.00	0.46	74.50	66.50	0.89	3.50	23.20	1850	118.5
PS08100555	-	-				42.00	74.00	17.50	2.00	70.00	35.50	0.51	84.00	68.50	0.82	3.50	22.00	1848	118.3
PS08100700	-	+				44.00	72.00	12.50	2.00	61.50	24.00	0.39	101.0	48.00	0.48	5.00	18.70	1839	117.8
PS08101212	-	-			-	51.00	74.00	21.00	2.00	69.00	53.00	0.77	82.50	74.00	0.90	3.50	18.60	1832	117.3
PS08100247	-	-				51.00	79.00	17.50	2.00	53.50	44.00	0.82	68.00	66.50	0.98	3.50	21.60	1831	117.2
PS08100909	-	-				44.00	74.00	14.00	2.00	43.00	19.00	0.44	52.00	49.50	0.95	2.50	23.60	1820	116.6
PS08100885	-	-				44.00	70.00	15.00	2.00	48.00	30.50	0.64	61.00	42.50	0.70	3.50	18.20	1811	116.0
PS08100829	-	-				39.00	72.00	10.50	2.00	27.50	29.00	1.00	58.50	44.50	0.76	6.00	21.10	1808	115.8
PS08100483	-	-				47.00	79.00	19.00	2.00	35.00	20.00	0.57	42.00	35.00	0.83	3.00	22.90	1789	114.6
PS08101226	-	-				44.00	72.00	12.00	2.00	28.00	22.00	0.79	51.50	45.00	0.87	6.00	22.30	1779	114.0
PS08101170	-	-				42.00	70.00	17.00	3.00	47.50	26.00	0.55	59.00	50.50	0.86	2.50	20.80	1779	114.0
PS08100816	-	-				39.00	72.00	13.50	2.00	42.50	29.50	0.69	59.50	49.00	0.82	3.50	23.10	1778	113.9
PS08100832	-	-				49.00	72.00	12.50	2.00	34.50	23.50	0.68	74.00	62.50	0.84	6.00	20.20	1775	113.7
PS08100891	-	-				44.00	72.00	16.00	2.00	50.50	28.00	0.55	63.00	46.50	0.74	2.50	17.10	1760	112.7
PS08101079	-	-				39.00	72.00	16.50	2.00	58.00	37.00	0.64	82.00	74.50	0.91	5.00	26.20	1743	111.6
PS08101178	-	-				49.00	74.00	20.00	2.00	64.50	45.00	0.70	77.00	64.00	0.83	3.00	18.50	1742	111.6
PS08100467	-	-				47.00	72.00	14.50	2.00	36.50	26.00	0.71	42.00	44.50	1.00	3.00	26.10	1735	111.1
PS08100703	-	-				49.00	70.00	15.00	2.00	47.50	29.50	0.62	56.00	56.50	1.00	3.50	17.50	1711	109.6
PS08100880	-	-				44.00	79.00	17.00	2.00	66.50	21.50	0.32	80.00	43.00	0.54	3.50	21.30	1700	108.8
PS08100943	-	-			-	47.00	74.00	18.00	2.00	52.00	35.00	0.67	66.00	56.00	0.85	3.00	26.70	1690	108.3
PS08101149	-	-				49.00	72.00	18.00	2.00	84.00	26.50	0.32	99.50	44.00	0.44	3.50	20.70	1687	108.1
PS08100978	-	-				49.00	72.00	13.50	2.00	65.50	36.50	0.56	80.50	77.00	0.96	6.50	24.80	1684	107.8
PS08101128	-	-				49.00	79.00	19.50	2.00	81.00	33.50	0.41	100.5	61.00	0.61	4.50	22.00	1677	107.4

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Agronomic and Yield Data for the Green, Yellow and Marrowfat Dry Pea Observation Nursery (0905)

Name	Leaf Type	Vine Type	FW 1	PM	PEMV	Days to Flower	Days to Maturity	Flower Node	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	# Repr Nodes	100 Seed Weight ..g..	Seed Yield kg/ha	% of Stirling
PS08100872	-	-				49.00	72.00	17.00	2.00	50.00	46.50	0.93	57.50	62.00	1.00	2.50	20.50	1637	104.9
PS08100871	-	-				44.00	72.00	18.50	2.00	54.50	37.50	0.69	64.00	56.50	0.88	2.50	18.60	1577	101.0
PS08100777	-	-			-	42.00	81.00	21.00	2.00	61.50	40.00	0.65	75.00	69.50	0.93	2.50	21.60	1571	100.6
STIRLING	-	-	+	-	-	44.00	72.00	16.50	2.00	46.50	40.50	0.87	54.00	51.00	0.94	1.50	17.30	1561	100.0
PS08100825	-	-				39.00	72.00	10.00	1.00	24.00	20.50	0.85	56.50	45.00	0.80	6.00	22.70	1552	99.39
PS08100865	-	-				47.00	81.00	20.00	2.00	49.50	39.00	0.79	57.00	61.00	1.00	3.00	20.10	1552	99.39
PS08100821	-	-				39.00	72.00	14.00	2.00	42.50	29.00	0.68	58.50	56.00	0.96	3.50	21.20	1547	99.08
PS08101266	-	-				51.00	72.00	20.00	1.00	68.00	47.00	0.69	75.00	73.00	0.97	2.00	18.10	1539	98.53
PS08100223	-	-				47.00	74.00	16.00	2.00	47.00	26.50	0.56	59.00	51.50	0.87	3.50	22.60	1533	98.20
PS08100861	-	-				49.00	81.00	17.00	2.00	45.50	30.00	0.66	55.00	49.50	0.90	2.50	23.60	1532	98.12
PS08100870	-	-			-	47.00	74.00	18.50	2.00	45.00	29.50	0.66	51.00	47.50	0.93	2.00	21.40	1532	98.12
PS08100827						39.00	83.00	15.50	2.00	49.00	25.50	0.52	71.00	58.50	0.82	4.00	22.70	1517	97.17
PS08100190	-	-			-	49.00	84.00	16.00	2.00	45.50	27.00	0.59	67.50	51.50	0.76	3.50	17.70	1510	96.69
PS08101238	-	-				39.00	70.00	17.00	2.00	65.00	47.00	0.72	77.00	67.00	0.87	4.00	21.60	1501	96.14
PS08101171	-	-				42.00	70.00	16.50	2.00	49.00	29.50	0.60	60.50	48.50	0.80	2.50	19.00	1475	94.44
PS08101221	-	-				44.00	72.00	11.00	1.00	40.00	28.50	0.71	59.00	55.50	0.94	6.00	21.80	1437	92.03
PS08100619	-	-			-	47.00	74.00	20.50	2.00	61.50	35.50	0.58	73.50	64.00	0.87	4.00	18.20	1413	90.46
PS08100950	-	-				44.00	79.00	17.00	2.00	51.50	36.00	0.70	61.00	58.00	0.95	2.00	24.00	1406	90.03
PS08101268	-	-				51.00	72.00	21.00	2.00	76.50	53.50	0.70	89.00	79.00	0.89	3.00	19.20	1391	89.09
PS08100411	-	-			-	49.00	79.00	20.50	2.00	47.00	25.00	0.53	55.00	47.00	0.85	2.00	19.30	1371	87.81
PS08100472	-	-				44.00	72.00	16.00	2.00	47.50	23.00	0.48	54.00	34.00	0.63	2.50	23.90	1366	87.50
PS08100893	-	-				44.00	72.00	17.00	2.00	55.50	37.50	0.68	63.00	50.50	0.80	2.00	23.50	1356	86.85
PS08100125	-	-				44.00	84.00	12.50	2.00	44.50	38.50	0.87	58.50	64.00	1.00	4.50	20.30	1347	86.28
PS08100164	-	-				49.00	84.00	14.00	2.00	44.00	27.50	0.63	57.50	53.50	0.93	3.50	22.30	1341	85.87
PS08101424	+/-			+	-	44.00	74.00	16.50	2.00	55.50	24.50	0.44	73.50	40.50	0.55	4.00	27.70	1331	85.26
PS08100817	-	-				39.00	72.00	13.50	2.00	35.50	23.50	0.66	53.50	48.50	0.91	4.50	22.90	1317	84.36
PS08100540	-	-				47.00	74.00	17.50	2.00	43.50	38.00	0.87	49.50	56.50	1.00	2.00	19.90	1302	83.35

Leaf type = + = normal leaf, - = afila or semi-leafless type

Vine type = + = tall, - = short

FW 1 = Fusarium wilt race 1; + = resistant; - = susceptible.

PM = Powdery Mildew; + = resistant; - = susceptible.

PEMV = Pea enation mosaic virus; + = resist

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the pod height at the green pod stage.

Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the plant height at the green plant stage.

Rep Nodes = average number of reproducing nodes to a plant. This experiment is not replicated and the LSD is not meaningful.

Planting Date 05/18/09 Harvest Date: 08/14/09

Agronomic and Yield Data for the Green, Yellow and Marrowfat Dry Pea Observation Nursery (0905)

Name	Leaf Type	Vine Type	FW 1	PM	PEMV	Days to Flower	Days to Maturity	Flower Node	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	# Repr Nodes	100 Seed Weight ..g..	Seed Yield kg/ha	% of Stirling
PS08100895	-	-				44.00	72.00	19.00	2.00	64.50	38.00	0.59	76.00	52.00	0.68	2.50	20.80	1269	81.25
PS08100875	-	-				46.00	79.00	20.00	2.00	65.00	39.50	0.61	74.00	66.00	0.89	2.00	19.50	1258	80.56
PS08100480	-	-				47.00	72.00	14.00	2.00	31.50	20.00	0.63	39.50	39.50	1.00	3.50	21.30	1240	79.41
PS08100087	-	-			-	53.00	89.00	18.50	2.00	56.00	47.00	0.84	63.00	76.00	1.00	2.50	18.60	1221	78.17
PS08100889	-	-			-	44.00	70.00	18.00	2.00	52.00	28.50	0.55	60.50	47.50	0.79	2.50	15.60	1145	73.36
PS08100887	-	-				42.00	72.00	17.00	2.00	47.00	34.00	0.72	47.50	45.00	0.95	2.00	18.70	1142	73.13
PS08100902	-	-				44.00	79.00	18.00	2.00	54.00	26.00	0.48	64.00	52.50	0.82	2.50	21.10	1118	71.57
PS08101342	+	-		+		42.00	72.00	17.00	2.00	48.50	30.00	0.62	60.00	42.50	0.71	2.50	30.10	1112	71.20
PS08100828	-	-				39.00	72.00	12.00	2.00	32.50	27.00	0.83	62.50	40.50	0.65	5.00	20.10	998.3	63.94
PS08100899	-	-				47.00	72.00	16.50	2.00	55.00	28.00	0.51	67.00	43.50	0.65	2.50	21.10	990.5	63.44
PS08100413	-	-				44.00	72.00	18.00	2.00	39.50	28.50	0.72	43.50	43.00	0.99	2.00	19.60	984.7	63.07
PS08101395	-	-		+		44.00	74.00	16.50	2.00	56.00	42.50	0.76	72.00	65.00	0.90	4.00	24.00	983.0	62.96
PS08100837	-	-				47.00	72.00	19.50	2.00	56.00	33.00	0.59	68.00	55.00	0.81	4.50	20.70	945.8	60.57
PS08100636	-	-				42.00	74.00	16.50	2.00	32.50	28.00	0.86	39.00	36.50	0.94	2.00	16.40	680.9	43.61
PS08100408	-	-				49.00	74.00	19.00	2.00	56.50	39.50	0.70	68.00	58.50	0.86	2.50	21.80	235.9	15.11
PS08100371	-	-		+		49.00	81.00	16.50	2.00	64.00	28.50	0.45	78.00	50.50	0.65	3.50	19.30	230.6	14.77
PS08100073	-	-		-	-	0.00	0.00	18.00	3.00	51.00	29.50	0.58	64.50	59.50	0.92	3.50	0.00	0.00	0.00
PS08100348	-	-			-	51.00	79.00	16.50	2.00	62.50	42.50	0.68	81.50	65.50	0.80	4.50	0.00	0.00	0.00
PS08100355	-	-		+	-	0.00	0.00	18.00	2.00	55.50	39.50	0.71	77.50	63.50	0.82	5.50	0.00	0.00	0.00
GRAND MEAN						45.22	76.07	16.58	1.97	53.08	32.84	0.63	68.12	56.42	0.83	3.56	21.46	2188	0.00
CV						13.72	12.53	15.93	12.42	21.87	27.04	24.22	19.09	21.57	16.85	34.73	11.61	32.27	0.00
LSD						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Leaf type = + = normal leaf, - = afila or semi-leafless type

Vine type = + = tall, - = short

FW 1 = Fusarium wilt race 1; + = resistant; - = susceptible.

PM = Powdery Mildew; + = resistant; - = susceptible.

PEMV = Pea enation mosaic virus; + = resist

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the pod height at the green pod stage.

Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the plant height at the green plant stage.

Rep Nodes = average number of reproducing nodes to a plant. This experiment is not replicated and the LSD is not meaningful.

Planting Date 05/18/09 Harvest Date: 08/14/09

WINTER PEA YIELD TRIALS

Winter pea advanced yield trials were planted at Garfield, Rosalia and Pullman, Washington. All trials were identical and consisted of 14 advanced breeding lines and three checks. Rosalia was lost to winter-kill, Garfield was lost to weed pressure. Only Pullman was harvested. There were large differences in the dates of maturity of the lines. However, our planting scheme did not allow ‘just-in-time’ harvesting – all plots were harvested on the same day. Therefore, many of the early maturing lines shattered and the yields recorded are not reflective of what would have been realized if harvest was timely. This trial also has a very high CV. Yields of the breeding lines ranged from 1728 – 5105 kg/ha. Yields of the checks were Windham: 2826 kg/ha; Whistler: 1589 kg/ha and Specter: 1293 kg/ha. Nine experimental lines had significantly higher yield than Whistler and Specter, two significantly out-yielded Windham.

Potential Variety Releases

PS03101269 has consistently performed well in the Palouse yield trials. Although it is a strong performer in the Palouse, it has not performed particularly well on the Waterville Plateau. It will not be recommended for that area. PS03101269 has long internodes, is semi-leafless and has green, food quality seeds. Data collected over three years are presented in Table 3. Issues with winter kill have resulted in limited location/year data. We will continue to evaluate this line in 2009/2010. Breeder’s seed will be made in 2010.

Table 3. Performance of winter pea PS03101269 (2007-2009).

Entry	FW R1	PM	PEMV	Leaf	Coty Color	SdWt (g/100sd)	Yield (kg/ha)
PS03101269	R		S	af	Green	15.2	2237
Windham	R	R	S	af	Yellow	14.9	2068
Specter	R	R	S	af	Yellow	13.7	1394
Whistler	R	R	S	af	Yellow	16.5	1574

PS03101146, PS05300234 and PS05300180 have performed very well in Wilbur and on the Waterville Plateau (in trials conducted by the Central Washington Grain Growers) but with limited enthusiasm on the Palouse. We will make breeder’s seed of these three lines in anticipation of releasing them as varieties with adaptation to a specific area. Characteristics of these three lines are presented in Table 4 (yield data kindly provided by Howard Nelson, CWGG, Wilbur, Washington).

Table 4. Characteristics of winter pea varieties adapted to Wilbur, Washington.

Entry	FW R1	PM	PEMV	Leaf	Coty Color	SdWt (g/100sd)	Yield (kg/ha)
PS03101146	R		R	af	Green	14.7	2691
PS05300234	R		S	af	Green	22.3	2605
PS09300180	R		S	af	Green	16.8	2512
Windham	R	R	S	af	Yellow	16.4	2813
Specter	R	R	S	af	Yellow	16.2	2436
Whistler	R	R	S	af	Yellow	16.2	2423

Agronomic and Yield Data for the Dry Winter Pea Advanced Yield Trial (0922)

Name	Leaf Type	Vine Type	FW 1	PM	PEMV	Days to Flower	Days to Maturity	Flower Node	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	# Repr Nodes	100 Seed Weight ..g..	Seed Yield kg/ha	% of WINDHAM
PS03100848	+	+	+		+	245.0	292.0	16.00	2.00	66.80	7.50	0.13	113.3	37.00	0.30	5.50	19.60	5105	180.6
PS0017018	+	+	+		+	249.0	294.0	19.50	2.00	69.00	5.00	0.07	127.3	41.20	0.31	6.00	15.30	4636	164.0
PS03101160	-	-	+	+	-	243.0	293.0	14.50	2.00	36.30	7.70	0.22	63.70	38.30	0.56	5.80	17.50	3722	131.7
PS05300239	-	-	+		-	240.0	291.0	15.70	2.00	29.50	11.30	0.38	60.20	32.50	0.62	4.80	19.90	3683	130.3
PS0230F210	+	+	+	+	-	238.0	290.0	16.50	2.00	54.70	5.50	0.11	97.70	27.60	0.29	4.80	18.30	3622	128.1
PS03101269	-	+	+		-	246.0	292.0	18.00	2.00	86.00	5.70	0.07	118.8	41.70	0.37	3.30	15.90	3561	126.0
PS05300234	-	-	+		-	238.0	294.0	13.50	1.00	27.20	8.80	0.32	58.00	47.90	0.72	4.30	22.30	3383	119.7
PS0230F063	-	-	+	+	-	238.0	292.0	15.50	2.00	31.50	8.50	0.27	61.20	45.40	0.67	5.70	14.10	3148	111.4
WINDHAM	-	-	+	+	-	236.0	290.0	16.50	2.00	30.80	16.50	0.55	64.20	43.40	0.69	5.70	16.40	2826	100.0
PS0230F092	-	-	+	+	-	239.0	293.0	16.20	2.00	37.70	11.30	0.32	65.80	37.10	0.53	5.30	14.40	2651	93.79
PS05300225	+	-	+		-	239.0	291.0	16.80	2.00	39.70	10.80	0.28	65.00	50.70	0.69	4.70	19.50	2521	89.18
PS05300180	-	-	+		-	240.0	291.0	17.20	1.00	42.20	8.30	0.19	74.50	39.90	0.54	5.80	16.80	2473	87.49
PS05300069	+	-	+		-	237.0	283.0	16.00	2.00	45.00	9.70	0.23	67.50	25.30	0.38	3.20	23.30	2297	81.28
PS05300083	+	-	+		-	237.0	283.0	16.00	2.00	46.20	9.50	0.22	63.20	25.30	0.44	3.50	23.40	2261	80.01
PS05300078	+	-	+		-	238.0	284.0	15.70	2.00	39.50	9.80	0.26	61.70	24.20	0.47	3.70	24.70	1728	61.13
WHISTLER	-	-	+	+	-	238.0	289.0	15.30	2.00	39.20	14.20	0.37	64.20	35.50	0.63	4.20	16.20	1589	56.23
SPECTER	-	+	+	+	-	237.0	291.0	16.30	2.00	32.50	11.70	0.39	53.70	35.40	0.74	3.80	16.20	1293	45.74
PRO 054-7256			+			237.0	288.0	15.20	2.00	32.20	20.20	0.63	53.70	44.40	0.87	4.20	15.70	1066	37.72
GRAND						239.6	290.0	16.13	1.85	43.66	10.11	0.28	74.08	37.38	0.55	4.69	18.31	2865	0.00
CV						1.16	0.63	10.88	17.91	14.71	47.26	56.19	9.91	15.56	19.68	19.34	10.53	25.37	0.00
LSD						3.83	2.50	2.42	0.46	8.87	6.60	0.21	10.14	8.04	0.15	1.25	2.66	1004	0.00

FW 1 = Fusarium wilt race 1; + = resistant; - = susceptible.

PM = Powdery Mildew; + = resistant; - = susceptible.

PEMV = Pea enation mosaic virus; + = resistant, - = susceptible

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the green pod height.

Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the plant height at the green plant stage.

Rep Nodes = average number of reproducing nodes to a plant.

Agronomic data are means of three replications at Pullman, WA. Planting Date 10/3/2008 Harvest Date: 07/28/2009

Agronomic and Yield Data for the Winter Dry Pea Preliminary Yield Trial (0923)

Name	Leaf Type	Vine Type	FW 1	PM	PEMV	Days to Flower	Days to Maturity	Flower Node	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	# Repr Nodes	100 Seed Weight ..g..	Seed Yield kg/ha	% of Specter
PS06300063	-	+				252	295	15.2	2	70.2	9.7	0.13	126.8	39.2	0.31	5.8	14.4	4334	124.2
PS06300064	-	+				249	294	15.5	2	73.8	10.3	0.14	120.0	41.8	0.35	6.5	11.9	3628	103.9
SPECTER	-	+	+	+	-	241	293	13.0	2	58.5	8.3	0.15	106.0	33.7	0.32	5.5	13.3	3491	100.0
PS06300008	-	+				243	295	16.2	2	66.0	8.2	0.13	118.0	37.5	0.32	6.5	13.6	3264	93.49
PS06300048	-	+				243	293	16.2	2	77.5	8.5	0.11	114.3	32.8	0.28	5.7	12.4	3068	87.89
WINDHAM	-	-	+	+	-	240	289	15.3	2	31.2	13.5	0.43	51.5	36.7	0.73	4.7	14.6	2279	65.29

FW 1 = Fusarium wilt race 1; + = resistant; - = susceptible.

PM = Powdery Mildew; + = resistant; - = susceptible.

PEMV = Pea enation mosaic virus; + = resistant, - = susceptible

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the pod height at the green pod stage.

Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the plant height at the green plant stage.

Rep Nodes = average number of reproducing nodes to a plant.

Agronomic data are means of three replications at Pullman, WA. Planting Date 10/03/2008 Harvest Date: 07/27/2009

Agronomic and Yield Data for the Winter Dry Pea Observation Nursery (0925)

Name	Leaf Type	Vine Type	FW 1	PM	PEMV	Days to Flower	Days to Maturity	Flower Node	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	# Repr Nodes	100 Seed Weight ..g..	Seed Yield kg/ha
ASSAS	+	+				241.0	288.0	13.50	2.00	50.50	7.00	0.13	104.0	22.50	0.22	6.50	18.40	1857
PICARD	+	+				241.0	288.0	14.50	2.00	56.00	5.50	0.10	116.5	37.00	0.32	6.00	9.60	813.3
CHEYENNE	-	-				236.0	288.0	16.00	2.00	34.50	5.50	0.17	47.50	27.00	0.57	2.50	21.10	475.3
EFB333	+	+				241.0	288.0	16.50	2.00	73.00	1.00	0.02	118.5	20.00	0.17	4.00	11.10	1789
PS06300190	-	+				241.0	290.0	15.50	2.00	73.00	1.00	0.01	113.5	10.50	0.09	4.50	11.90	1010
PS07300027	-	+				252.0	297.0	12.00	2.00	54.00	8.00	0.15	103.5	54.00	0.52	6.50	11.60	1850
PS07300028	-	+				252.0	292.0	12.50	2.00	58.00	2.50	0.05	114.5	31.00	0.28	7.00	11.30	2061
PS07300046	-	+				243.0	290.0	15.50	2.00	41.50	9.00	0.21	74.50	28.50	0.38	6.00	19.70	2702
PS07300050	-	-				241.0	290.0	16.00	2.00	28.50	8.50	0.30	61.00	27.00	0.45	4.50	17.90	2182
PS07300054	-	-				243.0	292.0	15.00	2.00	33.00	1.00	0.03	50.50	16.50	0.33	5.50	13.50	267.1
PS07300150	-	+				243.0	290.0	15.50	2.00	51.00	6.00	0.13	96.00	35.50	0.37	6.00	15.00	986.7
PRO 024-7510	-	-				250.0	288.0	15.00	1.00	25.00	4.50	0.17	42.50	32.00	0.76	5.50	19.10	491.4
GRAND						243.7	290.1	14.79	1.92	48.17	4.96	0.12	86.88	28.46	0.37	5.38	15.02	1374
CV						1.96	0.87	9.20	14.42	31.85	57.41	67.49	32.67	37.56	47.51	22.83	25.62	55.32
LSD						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

FW 1 = Fusarium wilt race 1; not conducted on preliminary observation nurseries

PM = Powdery Mildew; + = resistant, - = susceptible

PEMV = Pea enation mosaic virus; not conducted on preliminary observation nurseries

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the pod height at the green pod stage.

Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the plant height at the green plant stage.

Rep Nodes = average number of reproducing nodes to a plant.

This experiment is not replicated and the LSD is not meaningful. Planting Date 10/03/08 Harvest Date: 07/27/09

LENTIL YIELD TRIALS

Advanced lentil yield trials were conducted at three locations in 2009: Pullman, WA; Fairfield, WA, and Kendrick, ID. At each location, yield trials were conducted for advanced breeding lines that were large seeded and had yellow cotyledons, and advanced lines representing ‘Turkish Red’, ‘Eston’, ‘Spanish Brown’, and ‘zero-tannin’ market classes of lentil. Yields of all lentil market classes were highest at Fairfield and lowest at Kendrick. Across market classes, the highest yields were observed for Spanish Brown type entries, while rank of other market classes were, from highest yield to lowest, large seeded yellow, zero-tannin, Eston, and Turkish Red.

Twenty-one entries and four check varieties (‘Brewer’, ‘Merri’, ‘Richlea’, and ‘Riveland’) were included in the advanced large-seeded, yellow cotyledon lentil yield trial in 2008. The mean yield at Pullman was 1265 kg/ha, the mean yield at Fairfield was 1772 kg/ha and the mean yield at Kendrick was 993 kg/ha. The grand mean over all three locations was 1343 kg/ha. For the second year in a row, the advanced breeding line LC01602300R was the highest yielding entry over all locations. The highest yielding check was Richlea (1502 kg/ha) while the lowest was Riveland (1261 kg/ha). Thirteen breeding lines had greater yields than Brewer (1292 kg/ha). Seven breeding lines had seed weights (gm/100 seeds) that were greater than 7.0 g. The largest seed weight among checks was observed for Riveland (6.9 g/100 seeds) and the smallest was Richlea (4.9 g/100 seeds). Several advanced breeding lines also exhibited superior lodging tolerance and plant height than the commercial check varieties. Preliminary breeding lines (N = 29) of large seeded, yellow cotyledon lentils were also evaluated in 2009 at Pullman, WA. Several preliminary lines were identified that will be promoted into advanced yield trials conducted in 2010 based on superior yield, seed quality, and lodging tolerance. Breeding objectives for this broad class of lentils include improving seed color while increasing yields and seed size.

Advanced yield trials for the Turkish Red market class included 11 advanced breeding lines and the check variety ‘Crimson’. The mean yield at Pullman was 1119 kg/ha, the mean yield at Fairfield was 1324 kg/ha and the mean yield at Kendrick was 970 kg/ha. The grand mean over all three locations was 1138 kg/ha. When averaged over all three locations, five advanced breeding lines yielded higher than Crimson (1099 kg/ha). Five advanced breeding lines had higher yields than Crimson at all three locations. The selections LC06601228T and LC01602062T were the highest yielding entries, at 1372 and 1329 kg/ha, respectively. Both of these lines have a larger, more spherical seed than the check Crimson, and represent the seed shape that characterizes the ‘Turkish Red’ lentil class. All 11 advanced breeding lines had significantly larger seed size (100 seed weight) than Crimson. Data collected on the advanced breeding lines indicate that progress has been made in improving yield and seed size. Breeding efforts will continue to improve other important traits, including height and tolerance to lodging, and introgress these desirable traits into lines with excellent seed quality and high yields.

Nine Eston type advanced breeding lines were compared to the check variety Eston in 2009. The mean yield at Pullman was 1191 kg/ha, the mean yield at Fairfield was 1627 kg/ha and the mean yield at Kendrick was 845 kg/ha. The grand mean over all three locations was 1221 kg/ha. Four advanced breeding lines (LC03601590E, LC01602273E, LC07600198E, and LC05600812E) had yields that were greater than Eston at all three locations. Eight advanced breeding lines had

average yields that were greater than that of Eston (1143 kg/ha). Breeding line LC03601590 had the highest yield (1347 kg/ha) of all entries. The three highest yielding advanced breeding lines (LC03601590E, LC07600198E and LC01602273E) had average yields that were 17.8%, 13.5%, and 11.2% greater than that of Eston. These three breeding lines had seed weights that were very similar to that of Eston (3.2 g/100 seeds). These three breeding lines also were similar to Eston with respect to lodging tolerance, plant height, and maturity. Data collected on the nine advanced breeding lines indicate that excellent progress is being made on developing breeding lines that greatly exceed the yield of Eston while maintaining desirable seed size and agronomic characters required for this market class.

Eleven Spanish Brown advanced breeding lines were compared to the check variety Pardina in 2009. The mean yield at Pullman was 1383 kg/ha, the mean yield at Fairfield was 1624 kg/ha, the mean yield at Kendrick was 1160 kg/ha. The grand mean over all three locations was 1389 kg/ha. Four advanced breeding lines (LC02601144P, LC0660907P, LC0360204P and LC05600995P) had yields that were greater than Pardina (1444 kg/ha). Plant Height Index, an indicator of lodging tolerance, and canopy height, another indicator of ease of harvesting, were both significantly higher for LC02601144P than Pardina. The seed weights of the three highest yielding entries were very similar to that of Pardina. Data collected from the 11 advanced breeding lines indicates that progress is being made in improving yield, height, and lodging tolerance in Spanish Brown breeding lines.

Ten zero-tannin advanced breeding lines were compared to the yellow seed zero-tannin check Shasta and the red seed zero-tannin check Cedar at in 2009. The mean yield at Pullman was 1043 kg/ha, the mean yield at Fairfield was 1766 kg/ha and the mean yield at Kendrick was 1000 kg/ha. The grand mean over all three locations was 1230 kg/ha. The advanced breeding line LC07600224YZ was the highest yielding entry across all three locations, averaging 1476 kg/ha while Shasta and Cedar had yields of 1417 kg/ha and 1366 kg/ha, respectively. Surprisingly, the second highest yielding breeding line was the red cotyledon line LC99602585RZ. The high yielding lines LC07600224YZ and LC99602585RZ also had excellent tolerance to lodging and high pods. Results suggest gains are being made in developing high yielding zero-tannin lentils with both yellow and red cotyledons.

Potential Variety Releases

Foundation seed of Shasta and Cedar (zero-tannin type) were produced in 2009.

Breeder seed of LC02601144P was produced in 2009. LC02601144P is a high yielding Pardina type lentil that has placed first in the advanced Spanish Brown yield trials in both 2008 and 2009. Over eleven site-years of advanced yield trials LC02601144P has averaged 1348 kg/ha, a 13.1% increase over Pardina during the same trials (1192 kg/ha). The seed size of LC02601144P is very similar to that of Pardina ($\approx$ 3.8 g/100 seed). Besides high yield and good seed characteristics, LC02601144P is considerably taller than Pardina and has better tolerance to lodging (Table 1). LC02601144P will be considered for release and production of foundation seed in 2010.

Table 1. Comparison of LC02601144P and Pardina based on 11 location-years of data from advanced yield trials conducted in Washington and Idaho (2005-2009).

Line	Canopy Height (cm)	Days to Maturity	Plant Height Index ^a	Seed Weight (gm/100 seeds)	Yield (kg/ha)
LC02601144P	33	93.8	0.85	3.8	1348
Pardina	25.4	92.4	0.79	3.9	1192

^aPlant Height Index = Plant Height mature green stage/Plant Height harvest stage.

LC01602062T is a large seeded Turkish Red type lentil that averaged 1146 kg/ha over 12 location-years of evaluation in advanced yield trials, which represents a 17.9% increase in yield over the cultivar Crimson (972 kg/ha) over the same trials. LC01602062T has a much larger seed than Crimson (Table 2), which makes it much more amenable to splitting. In 2010 the line will be proposed for release and breeder seed will be produced.

Table 2. Comparison of LC01602062T and Crimson based on 12 location-years of data from advanced yield trials conducted in Washington and Idaho (2005-2009).

Line	Canopy Height (cm)	Days to Maturity	Plant Height Index ^a	Seed Weight (gm/100 seeds)	Yield (kg/ha)
LC01602062T	30.5	94	0.90	4.6	1146
Crimson	28.1	92.6	0.88	3.3	972

^aPlant Height Index = Plant Height mature green stage/Plant Height harvest stage.

For two consecutive years (2008-2009) LC01602300R has placed first in the large seeded green lentil advanced yield trials. LC01602300R has a seed that is similar in size to Richlea (≈ 5 g/100 seeds) and has yielded an average of 1174 kg/ha over 10 location-years of advanced yield trials (Table 3). This represents a yield increase of 10.3% over Richlea. In 2010 LC01602300R will be proposed for release and breeder seed will be produced.

Table 3. Comparison of LC01602300R and Richlea based on 10 location-years of data from advanced yield trials conducted in Washington and Idaho (2005-2009).

Line	Canopy Height (cm)	Days to Maturity	Plant Height Index ^a	Seed Weight (gm/100 seeds)	Yield (kg/ha)
LC01602300R	34.4	97.5	0.95	4.9	1174
Richlea	33.4	96.5	0.91	5.2	1064

^aPlant Height Index = Plant Height mature green stage/Plant Height harvest stage.

Location Yield Summary for the Large Yellow Type Lentil Advanced Yield Trial (0952)

Name	Pullman Seed Yield kg/ha	Kendrick Seed Yield kg/ha	Fairfield Seed Yield kg/ha	Farmington Seed Yield kg/ha	Mean Seed Yield kg/ha	% of Merrit kg/ha
LC01602300R	1510.50	1230.60	1947.20		1562.80	109
LC02600193R	1184.50	1209.00	2151.10		1514.90	106
RICHLEA	1334.80	1111.70	2059.10		1501.90	105
LC06600517L	1267.60	1171.90	2014.60		1484.70	104
LC06601616R	1334.10	1119.20	1993.90		1482.40	103
LC06601734L	1440.30	1157.50	1774.20		1457.30	102
LC06601388L	1331.30	1021.80	2012.50		1455.20	102
MERRIT	1458.20	1195.60	1644.70		1432.80	100
LC03601588R	1425.40	959.50	1877.70		1420.90	99
LC06600839L	1414.70	925.70	1756.80		1365.70	95
LC03600854L	1131.10	1104.30	1779.00		1338.10	93
LC05601303R	1282.70	885.50	1818.80		1329.00	93
LC04600316R	1342.30	809.60	1824.70		1325.50	93
LC04600633C	1243.10	1049.50	1639.30		1310.60	91
LC06600880L	1466.80	985.30	1457.50		1303.20	91
LC06601609L	1136.10	935.30	1810.90		1294.10	90
BREWER	1237.50	978.90	1658.80		1291.70	90
LC06601604L	1025.80	1073.20	1761.50		1286.80	90
RIVELAND	1130.40	916.20	1737.60		1261.40	88
LC02600793L	1126.00	910.00	1744.10		1260.00	88
LC04600736L	1260.30	926.40	1552.50		1246.40	87
LC05601268L	1292.70	1024.00	1333.90		1216.90	85
LC06601439L	1204.50	708.20	1581.60		1164.80	81
LC04600246L	1020.40	782.80	1690.10		1164.40	81
LC06601347L	1019.20	635.50	1680.10		1111.60	78
GRAND MEAN	1264.81	993.08	1772.08		1343.33	.00
CV	11.21	16.28	12.72		13.39	.00
LSD	232.67	265.34	370.00		167.55	.00

Yield data are means of three replications at each location.
Check variety = Merrit

Agronomic Data for the Large Yellow Type Lentil Advanced Yield Trial (0952)

Name	Days to Flower	Days to Maturity	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	100 Seed Weight ..g..
LC01602300R	50.00	92.00	2.00	23.00	15.80	0.70	41.30	36.50	0.89	4.80
LC02600193R	52.00	86.00	2.00	25.50	16.50	0.65	43.20	31.80	0.74	4.60
RICHLEA	52.00	92.00	3.00	25.50	17.20	0.67	44.20	35.30	0.80	4.90
LC06600517L	53.00	92.00	2.00	31.20	13.50	0.43	47.50	34.70	0.73	5.60
LC06601616R	54.00	89.00	2.00	28.70	18.70	0.65	49.00	37.50	0.77	5.60
LC06601734L	49.00	92.00	2.00	25.70	15.50	0.61	44.70	33.20	0.75	6.50
LC06601388L	49.00	91.00	2.00	23.70	18.50	0.79	44.80	35.50	0.79	6.70
MERRIT	43.00	84.00	2.00	25.20	14.50	0.59	44.50	30.50	0.69	6.20
LC03601588R	53.00	89.00	2.00	24.80	18.80	0.77	45.80	34.80	0.76	4.40
LC06600839L	49.00	92.00	2.00	23.50	15.30	0.66	41.50	34.20	0.83	7.60
LC03600854L	49.00	92.00	2.00	21.50	17.30	0.80	44.70	37.20	0.84	6.80
LC05601303R	44.00	84.00	2.00	19.80	12.30	0.62	42.30	24.50	0.58	5.00
LC04600316R	50.00	92.00	2.00	25.30	18.50	0.73	42.70	37.00	0.87	4.90
LC04600633C	47.00	88.00	2.00	25.30	14.80	0.59	44.50	31.50	0.72	7.20
LC06600880L	49.00	93.00	2.00	25.20	19.70	0.78	46.70	39.70	0.85	6.40
LC06601609L	50.00	92.00	2.00	22.20	16.50	0.75	42.80	37.20	0.87	7.00
BREWER	43.00	87.00	2.00	22.80	12.50	0.55	42.30	30.30	0.71	5.50
LC06601604L	49.00	93.00	2.00	24.50	16.50	0.67	42.50	32.70	0.77	7.00
RIVELAND	49.00	92.00	2.00	23.00	16.30	0.71	45.70	32.70	0.73	6.90
LC02600793L	49.00	92.00	2.00	25.20	19.70	0.79	44.50	32.00	0.73	7.00
LC04600736L	50.00	93.00	2.00	26.00	19.00	0.74	45.30	36.30	0.80	6.90
LC05601268L	50.00	93.00	2.00	22.70	17.00	0.76	43.20	33.70	0.78	7.10
LC06601439L	53.00	91.00	2.00	25.50	17.20	0.67	45.50	32.20	0.71	6.20
LC04600246L	52.00	92.00	2.00	26.30	19.50	0.74	44.50	33.30	0.75	6.20
LC06601347L	52.00	93.00	3.00	23.20	16.30	0.72	41.70	33.70	0.81	7.20
GRAND MEAN	49.59	90.63	2.09	24.61	16.70	0.69	44.21	33.91	0.77	6.18
CV	2.88	1.90	12.23	8.09	15.96	19.12	6.88	8.68	11.15	2.46
LSD	2.35	2.82	0.42	3.27	4.38	0.22	4.99	4.83	0.14	0.25

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the green pod height.
Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the green plant height at green plant stage.
Agronomic data are means of three replications at Pullman, WA. Planting Date: 5/18/09 Harvest Date: 8/20/09
Check Variety = Merrit

Mean Yields of the Large Yellow Lentil Advanced Yield Trial, 2005 - 2008

Name	2005	2006	2007	2008	2009
	kg/ha	kg/ha	kg/ha	kg/ha	kg/ha
LC01602300R	824	899	1716	1200	1563
LC02600193R	663	812	1484	858.6	1515
RICHLEA	651	616	1646	1128	1502
LC06600517L	...	...	...	...	1485
LC06601616R	...	...	...	...	1482
LC06601734L	...	...	...	...	1457
LC06601388L	...	...	...	...	1455
MERRIT	618	798	1543	991.2	1433
LC03601588R	...	918	1490	973.1	1421
LC06600839L	...	...	...	...	1366
LC03600854L	...	668	1673	982	1338
LC05601303R	...	...	1311	990.7	1329
LC04600316R	...	...	...	1050	1326
LC04600633C	...	...	...	...	1311
LC06600880L	...	...	...	...	1303
LC06601609L	...	...	...	...	1294
Brewer					1292
LC06601604L	...	...	...	...	1287
RIVELAND	550	723	1726	1079	1261
LC02600793L	597	713	1508	975.4	1260
LC04600736L	...	...	...	1002	1246
LC05601268L	...	...	1333	1055	1217
LC06601439L	...	...	...	...	1165
LC04600246L	...	...	...	1053	1164
LC06601347L	...	...	...	...	1112
GRAND MEAN	513	589	1482	968.5	1343
LSD	80	112	165.6	106.9	167.6

Yield data are means of three replications at each location, over three locations in each year except 2006 which is the mean of two locations.

Location Yield Summary for the Turkish Red Type Lentil Advanced Yield Trial (0951T)

Name	Pullman Seed Yield kg/ha	Kendrick Seed Yield kg/ha	Fairfield Seed Yield kg/ha	Farmington Seed Yield kg/ha	Mean Seed Yield kg/ha	% of Crimson kg/ha
LC06601228T	1620.20	1141.00	1353.80		1371.70	125
LC01602062T	1217.30	1162.90	1606.00		1328.70	121
LC05600043T	1160.40	1011.10	1426.10		1199.20	109
LC06601950T	1169.50	1078.50	1261.50		1169.80	106
LC06601934T	1171.80	875.30	1333.40		1126.80	102
CRIMSON	1218.00	869.00	1211.10		1099.40	100
LC06601550T	1159.90	949.40	1177.80		1095.70	100
LC05600787T	847.60	1062.50	1346.90		1085.70	99
LC01601724T	801.50	810.90	1638.60		1083.70	99
LC05600840T	875.20	837.10	1452.70		1055.00	96
LC05600841T	1051.30	955.60	1084.10		1030.30	94
LC06601935T	1131.90	883.70	1001.80		1005.80	91
GRAND MEAN	1118.71	969.76	1324.47		1137.65	.00
CV	18.03	13.22	16.04		16.23	.00
LSD	341.57	217.05	359.63		173.74	.00

Yield data are means of three replications at each location.
Check variety = Crimson

Agronomic Data for the Turkish Red Type Advanced Yield Trial (0951T)

Name	Days to Flower	Days to Maturity	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	100 Seed Weight ..g..
LC06601228T	44.00	87.00	2.00	17.70	11.20	0.67	40.00	28.00	0.71	4.50
LC01602062T	50.00	88.00	2.00	18.20	12.50	0.72	38.50	27.30	0.74	4.30
LC05600043T	50.00	89.00	2.00	22.20	11.30	0.51	40.20	30.70	0.76	4.20
LC06601950T	44.00	85.00	2.00	18.00	11.70	0.66	34.00	28.70	0.84	4.20
LC06601934T	51.00	89.00	2.00	19.30	12.30	0.64	37.30	25.50	0.68	4.10
CRIMSON	53.00	84.00	2.00	20.50	13.50	0.66	34.70	27.30	0.80	3.00
LC06601550T	44.00	86.00	2.00	14.30	11.30	0.80	32.20	28.80	0.90	3.80
LC05600787T	46.00	87.00	2.00	19.80	13.80	0.71	34.50	29.30	0.86	4.10
LC01601724T	50.00	90.00	2.00	20.70	10.80	0.52	35.50	23.50	0.67	4.30
LC05600840T	46.00	87.00	2.00	18.70	10.50	0.57	41.20	29.30	0.71	4.10
LC05600841T	47.00	87.00	2.00	20.20	11.20	0.60	40.30	30.20	0.76	3.80
LC06601935T	47.00	87.00	2.00	17.00	9.20	0.54	35.00	25.20	0.73	3.90
GRAND MEAN	47.75	87.14	2.06	18.88	11.61	0.63	36.94	27.82	0.76	4.04
CV	3.93	3.41	16.76	15.31	16.42	22.44	11.40	8.98	15.06	4.72
LSD	2.63	4.16	0.48	4.05	2.67	0.20	5.91	3.50	0.16	0.27

Planting Date: 5/18/09. Harvest Date: 8/20/09.

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the green pod height.

Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the green plant height at the green plant stage..

Agronomic data are means of three replications at Pullman, WA

Check Variety = Crimson

Mean Yield of the Turkish Lentil Advanced Yield Trail, 2005-2008

Name	2005	2006	2007	2008	2009
	kg/ha	kg/ha	kg/ha	kg/ha	kg/ha
LC06601228T	...	...	...	735	1372
LC01602062T	682	995	1789	934	1329
LC05600043T	...	...	1343	693	1199
LC06601950T	...	...	...	671	1170
LC06601934T	...	...	...	790	1127
CRIMSON	715	1025	1047	614	1099
LC06601550T	...	...	...	756	1096
LC05600787T	...	...	1360	598	1086
LC01601724T	617	934	1489	727	1084
LC05600840T	...	...	1512	660	1055
LC05600841T	...	...	1378	559	1030
LC06601935T	...	...	...	702	1006
GRAND MEAN	494	903	1334	683	1138
LSD	88	122	282	108	174

Yield data are means of three replications at each location, over three locations in each year except 2006 which is the mean of two locations.

Location Yield Summary for the Eston Type Lentil Advanced Yield Trial (0951E)

Name	Pullman Seed Yield kg/ha	Kendrick Seed Yield kg/ha	Fairfield Seed Yield kg/ha	Farmington Seed Yield kg/ha	Mean Seed Yield kg/ha	% of Eston kg/ha
LC03601590E	1483.30	887.40	1668.70		1346.50	118
LC07600198E	1135.70	883.50	1874.30		1297.80	114
LC01602273E	1474.50	920.10	1420.20		1271.60	111
LC05600812E	1054.90	839.10	1901.40		1265.10	111
LC06600385E	1226.00	825.30	1627.90		1226.40	107
LC06601820E	1304.20	904.30	1393.80		1200.80	105
LC07600199E	1062.80	911.30	1520.80		1165.00	102
LC06600388E	1094.40	758.40	1614.70		1155.80	101
ESTON	1035.20	755.00	1639.30		1143.20	100
LC07600186E	1036.00	762.70	1611.80		1136.80	99
GRAND MEAN	1190.69	844.71	1627.29		1220.90	.00
CV	11.57	8.69	11.44		11.49	.00
LSD	236.34	126.99	319.33		132.56	.00

Yield data are means of three replications at each location.
Check variety = Eston

Agronomic Data for the Eston Type Advanced Yield Trial (0951E)

Name	Days to Flower	Days to Maturity	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	100 Seed Weight ..g..
LC03601590E	52.00	85.00	2.00	24.70	14.80	0.60	43.30	31.30	0.72	3.20
LC07600198E	49.00	87.00	3.00	25.80	20.00	0.78	40.70	31.70	0.78	3.10
LC01602273E	49.00	84.00	3.00	24.70	16.70	0.68	43.20	30.80	0.71	3.30
LC05600812E	47.00	86.00	2.00	23.70	13.80	0.60	42.50	28.80	0.68	4.20
LC06600385E	50.00	85.00	2.00	24.30	12.50	0.51	39.30	25.50	0.65	3.60
LC06601820E	44.00	87.00	2.00	20.20	14.50	0.72	43.00	32.70	0.76	4.30
LC07600199E	49.00	87.00	2.00	24.00	16.30	0.69	40.00	31.20	0.78	3.30
LC06600388E	53.00	84.00	3.00	27.20	15.80	0.58	44.30	30.00	0.68	3.70
ESTON	49.00	87.00	3.00	27.70	15.00	0.54	45.20	30.80	0.69	3.20
LC07600186E	49.00	87.00	3.00	26.80	18.80	0.70	41.20	32.50	0.80	3.20
GRAND MEAN	49.13	85.87	2.50	24.90	15.83	0.64	42.27	30.53	0.73	3.52
CV	2.89	1.39	22.71	8.49	14.30	16.66	7.25	6.55	9.67	3.27
LSD	2.44	2.05	0.97	3.62	3.88	0.18	5.25	3.43	0.12	0.20

Planting Date: 05/18/09. Harvest Date: 08/17/09.

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the green pod height at green pod stage. Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the green plant height at the green plant stage. Agronomic data are means of three replications at Pullman, WA

Check Variety = Eston

Mean Yields of the Eston Type Lentil Advanced Yield Trial, 2005 - 2009

Name	2005	2006	2007	2008	2009
	kg/ha	kg/ha	kg/ha	kg/ha	kg/ha
LC03601590E	1004	1004	1568	1110	1347
LC07600198E	***	***	***	***	1298
LC01602273E	1022	1149	1630	1000	1272
LC05600812E	***	***	1639	914	1265
LC06600385E	***	***	***	944	1226
LC06601820E	***	***	***	933	1201
LC07600199E	***	***	***	***	1165
LC06600388E	***	***	***	1030	1156
ESTON	381	639	1348	954	1143
LC07600186E	***	***	***	***	1137
GRAND MEANS	608	698	1499	943	1221
LSD _(α=0.05)	89	127	171	93	133

Yield data are means of three replications at each location, over three locations in each year except 2006 which is the mean of two locations.

Location Yield Summary for the Pardina Type Lentil Advanced Yield Trial (0951P)

Name	Pullman Seed Yield kg/ha	Kendrick Seed Yield kg/ha	Fairfield Seed Yield kg/ha	Farmington Seed Yield kg/ha	Mean Seed Yield kg/ha	% of Pardina kg/ha
LC02601144P	1541.00	1189.90	1790.50		1507.10	104
LC06600907P	1174.30	1302.00	1885.60		1454.00	101
LC05600995P	1320.10	1174.00	1853.40		1449.20	100
PARDINA	1523.10	1189.30	1618.40		1443.60	100
LC03600204P	1391.50	1174.30	1762.20		1442.70	100
LC04600350P	1456.30	1105.00	1639.40		1400.20	97
LC04600346P	1449.20	1043.70	1577.50		1356.80	94
LC06601570P	1403.10	1246.50	1401.40		1350.30	94
LC06600906P	1204.70	1231.00	1608.20		1348.00	93
LC06601572P	1447.30	1202.40	1377.50		1342.40	93
LC06600446P	1363.90	1039.00	1540.70		1314.50	91
LC06600898P	1324.70	1020.30	1428.20		1257.70	87
GRAND MEAN	1383.26	1159.78	1623.59		1388.88	.00
CV	10.73	10.36	10.21		10.51	.00
LSD	251.42	206.94	280.80		137.44	.00

Yield data are means of three replications at each location.
Check variety = Pardina

Agronomic Data for the Pardina Type Advanced Yield Trial (0951P)

Name	Days to Flower	Days to Maturity	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	100 Seed Weight ..g..
LC02601144P	49.00	87.00	2.00	19.80	11.80	0.60	44.80	34.50	0.77	3.80
LC06600907P	50.00	86.00	2.00	22.20	9.30	0.45	44.50	25.20	0.57	3.70
LC05600995P	49.00	86.00	2.00	18.50	10.80	0.58	38.20	26.30	0.69	4.40
PARDINA	46.00	85.00	2.00	20.50	10.80	0.54	40.50	23.80	0.59	3.90
LC03600204P	45.00	85.00	2.00	21.70	11.30	0.53	40.70	27.80	0.69	4.00
LC04600350P	49.00	84.00	2.00	18.00	9.50	0.53	37.50	25.30	0.68	4.20
LC04600346P	47.00	85.00	2.00	16.50	10.00	0.62	34.70	23.50	0.68	4.30
LC06601570P	44.00	85.00	2.00	18.80	8.80	0.47	39.20	22.20	0.56	4.20
LC06600906P	43.00	85.00	2.00	17.70	10.00	0.57	39.30	26.70	0.68	4.20
LC06601572P	44.00	84.00	2.00	20.70	8.80	0.43	42.20	22.50	0.54	4.30
LC06600446P	47.00	82.00	2.00	20.20	8.50	0.43	38.80	24.30	0.63	3.90
LC06600898P	47.00	88.00	2.00	20.50	9.50	0.47	38.70	25.70	0.67	4.10
GRAND MEAN	46.78	85.25	2.03	19.58	9.94	0.52	39.92	25.65	0.65	4.09
CV	3.75	2.17	8.22	8.49	15.25	18.97	7.30	10.10	10.42	2.41
LSD	2.97	3.13	0.28	2.82	2.57	0.17	4.93	4.39	0.11	0.17

Planting Date: 5/18/09. Harvest Date: 8/17/09

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the green pod height.

Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the green plant height at green plant stage.

Agronomic data are means of three replications at Pullman, WA

Check Variety = Pardina

Mean Yields of the Pardina Type Lentil Advanced Yield Trial, 2005-2009.

Name	2005	2006	2007	2008	2009
	kg/ha	kg/ha	kg/ha	kg/ha	kg/ha
LC02601144P	1180	899	1439	1147	1507
LC06600907P	...	...	...	1001	1454
LC05600995P	...	...	1337	766	1449
PARDINA	1037	1069	1370	943	1444
LC03600204P	927	940	1394	923	1443
LC04600350P	...	1072	1119	883	1400
LC04600346P	...	1142	1200	799	1357
LC06601570P	...	...	...	1032	1350
LC06600906P	...	...	...	719	1348
LC06601572P	...	...	...	962	1342
LC06600446P	...	...	...	907	1315
LC06600898P	...	...	...	770	1258
GRAND MEAN	833	940	1257	871	1389
LSD	87	199	179	115	137

Yield data are means of three replications at each location, over three locations in each year except 2006 which is the mean of two locations.

Location Yield Summary for the Zero Tannin Type Lentil Advanced Yield Trial (0961)

Name	Pullman Seed Yield kg/ha	Kendrick Seed Yield kg/ha	Fairfield Seed Yield kg/ha	Farmington Seed Yield kg/ha	Mean Seed Yield kg/ha	% of Cedar kg/ha
LC07600224YZ	1242.90	1019.00	2164.60		1475.50	108
SHASTA	1188.30	1076.70	1985.00		1416.70	104
CEDAR	1275.30	1025.30	1796.80		1365.80	100
LC99602585RZ	988.90	1093.90	1917.20		1333.30	98
LC06600930YZ	947.80	1038.40	1825.00		1270.40	93
LC06600939YZ	1107.00	998.60	1554.70		1220.10	89
LC07600223YZ	964.90	1082.70	1604.00		1217.20	89
LC04600389YZ	1005.30	908.30	1720.10		1211.20	89
LC04600415YZ	884.10	973.80	1738.10		1198.70	88
LC07600312YZ	954.60	1006.50	1622.60		1194.60	87
LC07600310YZ	958.10	960.00	1657.20		1191.80	87
LC07600231YZ	995.30	818.90	1609.60		1141.30	84
GRAND MEAN	1042.69	1000.18	1766.25		1269.71	.00
CV	15.97	6.97	14.71		14.38	.00
LSD	281.92	118.07	439.87		171.89	.00

Yield data are means of three replications at each location.
Check variety = Cedar

Agronomic Data for the Zero Tannin Type Advanced Yield Trial (0961)

Name	Days to Flower	Days to Maturity	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	100 Seed Weight ..g..
LC07600224YZ	48.00	91.00	2.00	18.70	14.70	0.77	38.30	34.30	0.90	5.50
SHASTA	48.00	91.00	2.00	20.00	14.50	0.73	37.20	34.00	0.92	5.10
CEDAR	43.00	88.00	2.00	18.00	12.00	0.68	37.30	29.80	0.80	4.40
LC99602585RZ	48.00	91.00	2.00	17.70	13.80	0.78	34.00	29.70	0.88	3.70
LC06600930YZ	48.00	92.00	2.00	20.80	12.70	0.62	41.30	33.20	0.80	4.90
LC06600939YZ	48.00	91.00	2.00	19.80	16.20	0.82	39.20	33.30	0.86	5.60
LC07600223YZ	48.00	91.00	2.00	21.30	13.70	0.64	38.00	32.70	0.86	5.20
LC04600389YZ	48.00	91.00	2.00	21.20	15.80	0.75	36.00	31.80	0.88	5.70
LC04600415YZ	48.00	91.00	2.00	20.20	14.30	0.72	39.20	29.80	0.76	5.80
LC07600312YZ	48.00	91.00	2.00	18.70	13.20	0.71	36.50	30.30	0.83	5.10
LC07600310YZ	48.00	92.00	2.00	21.00	13.30	0.64	36.50	33.20	0.91	5.00
LC07600231YZ	49.00	91.00	2.00	18.80	17.20	0.92	37.50	32.80	0.88	5.30
GRAND MEAN	47.64	91.06	1.97	19.68	14.28	0.73	37.58	32.08	0.86	5.12
CV	0.70	1.24	8.45	8.77	13.80	16.00	6.05	5.91	8.66	3.75
LSD	0.56	1.91	0.28	2.92	3.34	0.20	3.85	3.21	0.13	0.33

Planting Date: 5/4/09. Harvest Date: 8/18/09.

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the green pod height.

Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the green plant height.

Agronomic data are means of three replications at Pullman, WA

Check Variety = Cedar

Agronomic and Yield Data for the Large Yellow Lentil Preliminary Yield Trail (0954)

Name	Days to Flower	Days to Maturity	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	100 Seed Weight ..g..	Seed Yield kg/ha	% of Brewer
RIVELAND	49.00	87.00	2.00	24.20	14.20	0.58	44.70	35.30	0.80	7.10	1368	129.9
LC07600559L	50.00	92.00	2.00	24.00	11.80	0.50	43.00	32.20	0.75	7.30	1327	126.0
LC07600151R	49.00	86.00	2.00	20.70	15.00	0.73	40.70	33.20	0.81	5.70	1326	125.9
LC07600553R	49.00	89.00	3.00	20.80	16.30	0.79	36.70	33.30	0.91	5.70	1308	124.2
LC07600524L	49.00	92.00	2.00	20.30	14.70	0.72	40.70	36.70	0.90	7.10	1281	121.6
LC07600517L	44.00	92.00	2.00	20.70	15.80	0.77	37.50	32.80	0.88	6.70	1278	121.4
LC07600591R	49.00	91.00	2.00	21.80	19.70	0.90	40.20	33.20	0.83	5.70	1248	118.5
RICHLEA	51.00	90.00	3.00	26.20	17.70	0.68	42.70	35.20	0.83	4.90	1207	114.6
LC07600536L	52.00	92.00	2.00	25.50	17.70	0.69	37.20	35.50	0.96	6.60	1160	110.1
LC07600233e	47.00	91.00	2.00	20.80	17.20	0.83	46.50	40.80	0.88	5.90	1135	107.7
LC07600586R	57.00	93.00	2.00	23.70	16.50	0.72	42.30	37.00	0.87	6.00	1133	107.6
LC07600380L	50.00	91.00	2.00	25.50	15.70	0.62	43.00	35.20	0.83	7.30	1065	101.1
LC07600545L	49.00	92.00	2.00	19.80	15.30	0.77	39.50	33.80	0.86	7.00	1062	100.8
LC07600342L	49.00	88.00	2.00	20.70	12.80	0.63	37.50	33.30	0.89	5.70	1055	100.2
BREWER	44.00	89.00	2.00	20.20	10.70	0.53	39.00	29.70	0.76	5.70	1053	100.0
LC07600705L	50.00	93.00	3.00	20.80	16.00	0.77	39.20	36.20	0.92	7.30	1050	99.71
LC07600780R	52.00	93.00	3.00	25.20	16.80	0.69	43.00	34.20	0.81	6.00	1024	97.26
LC07600364L	56.00	93.00	2.00	28.00	13.50	0.49	45.00	34.50	0.78	7.40	1012	96.06
LC07600556L	53.00	93.00	3.00	22.30	16.80	0.78	42.30	34.70	0.82	6.10	1003	95.25
LC07600368L	56.00	93.00	2.00	25.80	13.80	0.56	43.30	33.00	0.77	7.90	995.5	94.51
LC07600570L	49.00	92.00	2.00	22.30	17.70	0.79	40.00	35.70	0.89	6.50	994.0	94.37
LC07600760L	46.00	92.00	2.00	21.20	14.00	0.66	43.30	36.30	0.84	8.50	967.6	91.86
LC07600376L	57.00	93.00	2.00	25.80	17.20	0.67	40.30	33.50	0.83	7.10	948.0	90.00
LC07600684L	51.00	93.00	2.00	23.70	18.70	0.80	37.50	34.50	0.92	8.60	934.6	88.73
LC07600738L	49.00	88.00	2.00	20.80	11.80	0.57	39.80	32.30	0.82	7.50	931.8	88.46
LC07600234e	50.00	93.00	2.00	22.20	17.00	0.77	43.70	38.20	0.88	6.40	924.3	87.75
LC07600541L	51.00	93.00	3.00	21.70	17.50	0.82	39.50	34.70	0.89	6.90	918.1	87.16

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the green pod height at the green pod stage. Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the green plant height at the green plant stage. Agronomic data are means of three replications at Pullman, WA. Planting Date 05/18/09 Harvest Date: 8/20/09

Agronomic and Yield Data for the Large Yellow Lentil Preliminary Yield Trail (0954)

Name	Days to Flower	Days to Maturity	Pods/ Peduncle	Pod Height	Pod Ht Maturity	Pod Ht Index	Vine Length	Canopy Height	Plant Ht Index	100 Seed Weight	Seed Yield	% of Brewer
				..cm..	..cm..		..cm..	..cm..		..g..	kg/ha	
LC07600378L	55.00	93.00	3.00	27.00	18.00	0.69	42.70	35.30	0.84	7.30	889.2	84.42
LC07600241L	49.00	93.00	2.00	19.80	16.80	0.86	39.30	31.20	0.81	8.40	876.4	83.21
LC07600247L	46.00	93.00	2.00	25.00	17.30	0.72	42.70	33.30	0.78	6.60	829.4	78.74
LC07600689L	57.00	93.00	2.00	25.80	12.80	0.50	45.50	35.00	0.77	6.70	805.4	76.46
LC07600370L	55.00	93.00	2.00	27.70	18.30	0.67	43.30	34.70	0.80	6.20	426.9	40.53
GRAND MEAN	50.60	91.60	2.25	23.13	15.79	0.70	41.30	34.51	0.84	6.74	1048	0.00
CV	3.36	1.78	18.95	10.83	18.62	17.61	7.70	8.13	9.30	7.47	14.79	0.00
LSD	2.78	2.66	0.70	4.09	4.80	0.20	5.19	4.58	0.13	0.82	253.0	0.00

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the green pod height at the green pod stage. Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the green plant height at the green plant stage. Agronomic data are means of three replications at Pullman, WA. Planting Date 05/18/09 Harvest Date: 8/20/09

Agronomic and Yield Data for the Lentil Observation Nursery (0955)

Name	Days to Flower	Days to Maturity	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	100 Seed Weight ..g..	Seed Yield kg/ha
LC0860B117L	52.00	92.00	2.00	17.50	15.00	0.86	39.50	37.50	0.95	6.40	3658
LC0860B094T	48.00	92.00	2.00	16.00	11.00	0.69	36.00	24.00	0.67	4.10	2603
LC08600066E	48.00	92.00	2.00	8.00	2.00	0.25	27.50	9.50	0.35	4.20	2175
LC0860B098T	43.00	90.00	2.00	15.00	15.00	1.00	39.00	36.50	0.94	4.00	2086
LC0860B085T	43.00	92.00	2.00	16.00	11.50	0.72	39.50	26.00	0.66	5.30	2084
LC08600132T	43.00	90.00	2.00	11.50	9.50	0.83	30.00	24.50	0.82	4.50	2020
LC08600039E	43.00	87.00	2.00	21.00	16.00	0.76	41.00	39.00	0.95	4.00	1907
LC08600169T	43.00	85.00	2.00	15.50	9.50	0.61	33.50	32.50	0.97	3.80	1903
LC08600198T	48.00	90.00	2.00	19.00	9.50	0.50	33.00	30.00	0.91	4.20	1889
LC08600021E	57.00	92.00	2.00	24.00	19.00	0.79	39.50	31.00	0.78	5.30	1840
LC08600161T	43.00	83.00	2.00	15.50	9.00	0.58	30.00	28.50	0.95	3.40	1825
LC07600176P	48.00	85.00	2.00	18.00	11.50	0.64	39.50	30.50	0.77	3.40	1820
LC08600171T	48.00	87.00	2.00	15.50	11.00	0.71	35.50	35.00	0.99	3.60	1806
LC0860B099T	48.00	92.00	2.00	15.50	11.00	0.71	35.50	33.00	0.93	4.20	1795
PARDINA	43.00	87.00	2.00	16.00	10.00	0.63	35.50	20.00	0.56	3.50	1780
LC0860B014P	48.00	87.00	2.00	25.00	11.00	0.44	46.00	27.50	0.60	3.70	1724
LC08600185T	48.00	92.00	2.00	17.50	11.00	0.63	34.50	31.00	0.90	4.50	1721
LC08600140T	43.00	83.00	2.00	15.50	6.50	0.42	33.50	17.50	0.52	3.50	1678
LC0860B096T	48.00	92.00	2.00	17.50	8.50	0.49	37.00	26.00	0.70	5.20	1660
LC08600116P	48.00	85.00	2.00	23.50	14.50	0.62	41.00	30.50	0.74	4.50	1648
LC08600112P	43.00	85.00	2.00	19.00	10.00	0.53	35.50	23.50	0.66	4.60	1645
LC08600225T	43.00	90.00	2.00	15.00	11.50	0.77	36.50	28.50	0.78	4.10	1640
LC08600121P	43.00	83.00	1.00	17.00	5.50	0.32	41.50	25.50	0.61	3.90	1635
LC08600196T	43.00	90.00	2.00	19.00	7.50	0.39	34.50	31.50	0.91	4.40	1625
LC0860B133L	48.00	90.00	2.00	25.50	16.50	0.65	40.00	39.50	0.99	6.70	1625
LC08600388T	48.00	92.00	2.00	13.00	12.00	0.92	38.50	35.50	0.92	4.10	1619
LC08600189T	48.00	90.00	2.00	24.50	7.50	0.31	34.00	31.50	0.93	3.90	1610

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the green pod height.

Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the green plant height.

Varieties without data were dropped in the field and no data was collected.

Planting Date 05/19/09 Harvest Date: 08/21/09

Agronomic and Yield Data for the Lentil Observation Nursery (0955)

Name	Days to Flower	Days to Maturity	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	100 Seed Weight ..g..	Seed Yield kg/ha
LC08600069E	48.00	87.00	2.00	16.50	14.00	0.85	36.50	32.00	0.88	3.90	1596
LC08600122T	43.00	90.00	2.00	16.00	13.50	0.84	33.00	32.00	0.97	4.20	1593
LC08600141T	48.00	85.00	2.00	15.50	12.50	0.81	36.50	28.50	0.78	3.60	1592
LC07600265P	48.00	85.00	2.00	16.50	13.50	0.82	41.00	31.50	0.77	3.70	1587
LC08600222T	43.00	92.00	1.00	11.00	10.50	0.95	32.00	31.50	0.98	4.80	1585
LC08600005E	48.00	92.00	3.00	23.50	16.00	0.68	42.50	40.50	0.95	4.90	1574
LC08600221T	48.00	92.00	2.00	14.00	12.00	0.86	34.00	31.50	0.93	4.80	1571
LC08600427T	48.00	83.00	2.00	26.00	12.00	0.46	45.00	21.50	0.48	3.90	1555
LC08600144T	43.00	83.00	2.00	16.00	10.00	0.63	33.00	18.00	0.55	3.50	1543
LC08600420T	48.00	85.00	2.00	20.00	4.00	0.20	37.50	14.50	0.39	3.90	1541
LC08600417T	48.00	85.00	2.00	14.50	6.50	0.45	31.00	26.00	0.84	4.40	1541
LC08600114P	43.00	83.00	2.00	16.00	11.00	0.69	32.00	27.00	0.84	4.70	1540
LC08600137T	43.00	90.00	2.00	16.00	11.50	0.72	33.50	29.00	0.87	4.40	1538
RIVELAND	48.00	92.00	2.00	25.50	17.00	0.67	41.00	34.00	0.83	7.30	1528
LC08600111P	48.00	74.00	3.00	23.00	9.50	0.41	38.00	22.00	0.58	3.90	1526
LC08600220T	48.00	85.00	2.00	13.00	13.00	1.00	32.00	25.50	0.80	4.20	1517
LC08600071E	43.00	87.00	2.00	17.50	15.00	0.86	35.50	33.00	0.93	4.40	1510
LC08600091T	57.00	92.00	3.00	21.50	7.50	0.35	38.00	20.00	0.53	4.50	1480
LC08600187T	48.00	90.00	2.00	21.00	7.50	0.36	37.00	30.50	0.82	4.20	1470
LC08600138T	43.00	83.00	2.00	15.50	9.00	0.58	34.50	17.50	0.51	3.50	1468
LC08600113P	48.00	85.00	2.00	19.00	10.50	0.55	37.00	29.50	0.80	4.60	1462
LC08600109P	43.00	83.00	2.00	18.50	14.50	0.78	35.50	30.00	0.85	4.40	1459
CRIMSON	50.00	80.00	2.00	27.00	12.00	0.44	37.50	23.00	0.61	3.00	1452
LC08600219T	48.00	90.00	2.00	21.00	9.50	0.45	43.50	26.00	0.60	4.20	1451
LC08600160T	43.00	83.00	2.00	12.00	6.50	0.54	31.00	18.00	0.58	3.70	1444
LC0860B108R	50.00	90.00	3.00	24.50	18.00	0.73	40.00	28.00	0.70	6.30	1437
LC08600124P	43.00	83.00	2.00	23.00	9.50	0.41	38.50	23.00	0.60	4.40	1434

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the green pod height.
Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the green plant height.
Varieties without data were dropped in the field and no data was collected.

Planting Date 05/19/09 Harvest Date: 08/21/09

Agronomic and Yield Data for the Lentil Observation Nursery (0955)

Name	Days to Flower	Days to Maturity	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	100 Seed Weight ..g..	Seed Yield kg/ha
LC08600209T	48.00	92.00	2.00	14.50	12.50	0.86	34.50	32.50	0.94	4.40	1432
LC08600173T	43.00	87.00	2.00	14.00	13.00	0.93	34.00	32.50	0.96	3.80	1425
LC08600115P	48.00	85.00	2.00	24.00	12.50	0.52	40.50	31.00	0.77	4.30	1416
LC08600038E	43.00	85.00	2.00	18.50	14.50	0.78	39.00	35.00	0.90	3.70	1411
LC08600226T	43.00	90.00	2.00	13.50	9.00	0.67	34.50	33.50	0.97	3.90	1409
LC0860B130L	48.00	90.00	2.00	22.00	14.50	0.66	42.50	38.00	0.89	6.90	1409
LC08600176T	43.00	90.00	2.00	13.50	10.00	0.74	41.00	29.50	0.72	4.50	1401
LC0860B132L	48.00	92.00	2.00	21.50	19.50	0.91	45.50	37.00	0.81	7.00	1399
LC08600224T	48.00	90.00	2.00	17.00	13.50	0.79	39.00	32.00	0.82	4.40	1399
LC08600076E	48.00	83.00	2.00	19.50	11.00	0.56	37.00	26.50	0.72	3.90	1397
LC08600105P	43.00	83.00	2.00	12.50	10.00	0.80	31.50	24.50	0.78	4.10	1396
LC08600387T	48.00	90.00	2.00	14.00	11.50	0.82	32.50	31.00	0.95	4.00	1391
LC08600136T	43.00	90.00	2.00	14.00	11.50	0.82	33.50	23.50	0.70	4.30	1376
LC07600267P	43.00	85.00	2.00	15.00	11.50	0.77	27.50	25.50	0.93	3.70	1364
LC08600212T	48.00	85.00	2.00	16.00	11.00	0.69	32.00	24.50	0.77	4.10	1356
LC0860B090P	50.00	87.00	2.00	24.00	16.50	0.69	38.50	23.00	0.60	3.70	1342
LC08600244T	43.00	83.00	2.00	13.00	10.00	0.77	35.00	28.00	0.80	3.90	1340
LC08600045E	48.00	85.00	2.00	20.00	16.00	0.80	34.50	31.00	0.90	3.80	1339
MERRIT	43.00	90.00	2.00	18.50	15.50	0.84	40.50	35.00	0.86	6.10	1333
LC0860B016P	48.00	87.00	2.00	19.00	10.50	0.55	35.50	25.50	0.72	4.00	1324
LC0860B126R	48.00	90.00	2.00	22.50	14.50	0.64	40.00	33.00	0.83	5.70	1324
LC0860B123L	48.00	92.00	2.00	17.50	13.50	0.77	35.50	34.50	0.97	9.00	1324
LC08600340T	57.00	92.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.70	1315
LC08600217T	43.00	90.00	2.00	13.50	10.00	0.74	39.00	27.00	0.69	4.00	1312
LC08600174T	43.00	87.00	2.00	10.00	7.50	0.75	31.50	27.50	0.87	3.80	1301
LC08600191T	48.00	90.00	2.00	16.00	12.00	0.75	34.50	31.50	0.91	4.30	1283
LC08600125P	43.00	83.00	2.00	20.50	6.50	0.32	38.00	14.50	0.38	3.70	1278

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the green pod height. Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the green plant height. Varieties without data were dropped in the field and no data was collected.

Planting Date 05/19/09 Harvest Date: 08/21/09

Agronomic and Yield Data for the Lentil Observation Nursery (0955)

Name	Days to Flower	Days to Maturity	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	100 Seed Weight ..g..	Seed Yield kg/ha
LC08600104P	43.00	83.00	2.00	16.50	15.00	0.91	36.50	29.00	0.79	4.50	1273
LC08600093T	43.00	90.00	2.00	10.00	7.50	0.75	34.00	20.50	0.60	4.20	1271
LC0860B013P	43.00	87.00	3.00	19.50	9.00	0.46	40.00	17.00	0.43	3.50	1267
LC08600120P	43.00	83.00	2.00	18.50	6.00	0.32	39.00	17.50	0.45	4.20	1266
LC08600234T	43.00	85.00	2.00	12.00	8.00	0.67	34.50	23.00	0.67	4.30	1248
LC08600085E	48.00	92.00	2.00	17.50	14.00	0.80	42.00	34.50	0.82	4.30	1240
LC08600156T	43.00	83.00	2.00	15.00	10.00	0.67	34.00	28.00	0.82	4.20	1205
LC08600073E	52.00	92.00	3.00	25.50	17.00	0.67	39.00	34.00	0.87	4.00	1203
LC08600094T	48.00	90.00	1.00	16.00	9.00	0.56	33.50	23.50	0.70	4.10	1200
LC07600274P	43.00	92.00	2.00	15.50	13.00	0.84	31.50	31.00	0.98	4.30	1199
LC08600421T	50.00	85.00	3.00	19.50	2.00	0.10	43.50	15.50	0.36	4.20	1177
LC0860B121L	48.00	92.00	2.00	18.50	13.50	0.73	36.00	0.00	0.00	8.00	1174
LC07600455E	48.00	83.00	3.00	24.50	20.00	0.82	39.50	30.50	0.77	3.50	1160
LC07600394P	48.00	83.00	3.00	19.50	13.50	0.69	41.50	32.50	0.78	3.70	1159
LC07600268P	48.00	92.00	2.00	18.00	12.00	0.67	39.00	30.50	0.78	3.60	1144
LC0860B004E	50.00	92.00	3.00	22.50	15.50	0.69	33.50	33.50	1.00	4.00	1117
LC08600014E	43.00	74.00	3.00	19.50	10.50	0.54	41.50	30.00	0.72	4.30	1111
LC0860B005E	48.00	87.00	1.00	19.00	14.00	0.74	37.00	28.50	0.77	3.50	1110
LC08600146T	48.00	90.00	2.00	20.50	12.00	0.59	31.50	23.50	0.75	3.50	1108
LC08600434E	50.00	92.00	3.00	23.50	16.50	0.70	37.50	35.50	0.95	6.20	1104
LC08600235T	48.00	90.00	2.00	17.50	6.50	0.37	35.50	15.50	0.44	3.50	1087
LC08600238P	48.00	90.00	2.00	21.00	14.00	0.67	41.50	29.50	0.71	4.80	1083
LC08600328T	50.00	92.00	2.00	20.50	8.50	0.41	31.00	24.50	0.79	4.30	1081
LC08600107P	43.00	83.00	2.00	22.00	9.50	0.43	38.00	26.00	0.68	4.60	1071
LC08600006E	52.00	92.00	2.00	29.00	14.00	0.48	42.00	33.00	0.79	4.60	1070
LC08600365T	57.00	92.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.60	1067
LC08600344T	48.00	92.00	2.00	19.50	11.50	0.59	36.00	31.00	0.86	4.00	1060

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the green pod height.
Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the green plant height.
Varieties without data were dropped in the field and no data was collected.

Planting Date 05/19/09 Harvest Date: 08/21/09

Agronomic and Yield Data for the Lentil Observation Nursery (0955)

Name	Days to Flower	Days to Maturity	Pods/ Peduncle	Pod Height	Pod Ht Maturity	Pod Ht Index	Vine Length	Canopy Height	Plant Ht Index	100 Seed Weight	Seed Yield
				..cm..	..cm..		..cm..	..cm..		..g..	kg/ha
LC08600036E	48.00	83.00	3.00	19.00	15.50	0.82	37.00	33.00	0.89	3.70	1059
LC08600352T	59.00	92.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30	1055
LC08600437E	48.00	92.00	2.00	17.50	14.50	0.83	31.00	29.00	0.94	5.70	1055
LC08600001E	48.00	85.00	2.00	21.50	15.50	0.72	41.00	32.50	0.79	4.60	1052
LC08600075E	50.00	87.00	2.00	23.00	15.00	0.65	36.00	31.50	0.88	4.40	1051
LC08600332T	50.00	92.00	2.00	19.50	12.50	0.64	36.00	24.00	0.67	3.60	1020
LC08600126P	43.00	83.00	2.00	18.50	5.50	0.30	37.50	14.50	0.39	3.80	1015
LC08600044E	50.00	83.00	2.00	24.00	14.00	0.58	33.00	28.00	0.85	3.70	1013
LC08600041E	48.00	85.00	3.00	21.50	12.50	0.58	38.50	23.50	0.61	4.30	1009
LC0860B115L	52.00	92.00	2.00	25.00	15.50	0.62	39.00	34.00	0.87	6.70	1005
LC08600089B	48.00	92.00	2.00	17.50	15.50	0.89	34.50	21.50	0.62	6.10	998.3
LC08600027E	48.00	83.00	2.00	19.00	14.50	0.76	31.00	30.50	0.98	3.10	996.7
LC08600287T	50.00	92.00	0.00	0.00	0.00	0.00	33.00	30.50	0.92	3.40	977.3
LC08600062E	43.00	92.00	2.00	17.00	10.00	0.59	33.50	26.00	0.78	4.00	966.7
LC08600155T	48.00	83.00	2.00	20.50	11.50	0.56	34.00	28.00	0.82	3.90	964.2
LC08600383T	50.00	92.00	3.00	16.00	12.00	0.75	35.50	30.50	0.86	4.30	958.4
LC0860B110L	52.00	90.00	2.00	26.00	23.00	0.88	43.00	42.00	0.98	6.30	956.0
LC0860B011P	43.00	90.00	2.00	22.50	4.00	0.18	41.50	14.50	0.35	4.80	954.5
LC0860B067T	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.60	949.1
LC08600401T	50.00	92.00	2.00	20.50	6.00	0.29	35.50	26.00	0.73	4.60	943.5
LC08600043E	48.00	85.00	2.00	24.00	16.00	0.67	36.50	32.50	0.89	4.10	941.9
LC08600335T	52.00	92.00	2.00	17.50	13.00	0.74	35.50	28.00	0.79	3.60	939.8
LC08600097T	48.00	92.00	2.00	14.50	9.50	0.66	32.50	27.50	0.85	4.20	934.2
LC0860B107L	57.00	92.00	2.00	23.50	15.00	0.64	34.50	32.50	0.94	6.70	933.4
LC08600254P	48.00	92.00	2.00	23.00	9.00	0.39	44.50	21.00	0.47	3.40	931.6
LC08600017E	48.00	83.00	2.00	20.00	11.00	0.55	36.50	30.50	0.84	4.30	921.2
LC08600382T	57.00	92.00	2.00	22.50	11.00	0.49	37.00	29.50	0.80	3.90	899.1

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the green pod height.

Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the green plant height.

Varieties without data were dropped in the field and no data was collected.

Planting Date 05/19/09 Harvest Date: 08/21/09

Agronomic and Yield Data for the Lentil Observation Nursery (0955)

Name	Days to Flower	Days to Maturity	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	100 Seed Weight ..g..	Seed Yield kg/ha
LC08600103P	43.00	83.00	2.00	15.50	11.00	0.71	38.50	30.00	0.78	4.20	897.2
LC08600035E	48.00	87.00	2.00	21.00	12.50	0.60	36.00	35.00	0.97	3.40	884.0
LC08600002E	48.00	85.00	2.00	18.50	13.50	0.73	36.00	30.50	0.85	4.80	881.1
LC0860B069T	48.00	92.00	2.00	17.50	10.50	0.60	37.50	26.00	0.69	3.80	878.2
LC08600432E	48.00	92.00	3.00	19.50	11.50	0.59	38.00	35.00	0.92	5.80	864.8
LC08600033E	48.00	92.00	2.00	20.50	17.00	0.83	40.00	30.00	0.75	3.30	862.1
LC0860B113L	50.00	90.00	3.00	22.00	20.00	0.91	37.00	34.50	0.93	6.50	842.2
LC08600016E	52.00	92.00	3.00	17.00	17.00	1.00	32.50	30.50	0.94	4.50	838.3
LC08600299T	48.00	83.00	2.00	19.50	5.50	0.28	31.50	17.00	0.54	2.90	838.1
LC08600418T	48.00	83.00	2.00	19.50	12.00	0.62	34.50	22.00	0.64	3.50	830.9
LC08600290T	52.00	92.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	4.10	829.4
LC08600048E	48.00	85.00	3.00	19.00	14.50	0.76	33.00	29.50	0.89	4.00	822.0
LC08600433E	52.00	92.00	3.00	19.00	18.00	0.95	37.00	34.50	0.93	4.50	810.0
LC08600364T	59.00	92.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.70	806.5
LC07600456P	48.00	87.00	3.00	17.50	15.50	0.89	34.00	28.00	0.82	3.60	806.2
LC0860B028T	57.00	92.00	2.00	23.50	20.50	0.87	40.00	35.00	0.88	3.50	798.0
LC0860B003E	50.00	92.00	2.00	20.00	10.00	0.50	36.00	27.50	0.76	5.20	784.7
LC08600255T	50.00	92.00	2.00	19.50	10.00	0.51	37.50	22.50	0.60	3.40	775.6
LC08600229T	43.00	92.00	2.00	17.50	6.00	0.34	38.50	18.50	0.48	3.30	774.2
LC08600032E	48.00	87.00	3.00	20.50	15.50	0.76	35.50	33.00	0.93	4.00	773.0
LC08600099T	48.00	92.00	2.00	17.00	8.50	0.50	36.00	24.50	0.68	4.60	759.5
LC0860B007E	50.00	83.00	2.00	18.00	10.00	0.56	38.00	27.50	0.72	3.00	759.1
LC08600326T	57.00	92.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.10	755.6
LC08600049E	43.00	85.00	2.00	18.00	12.50	0.69	35.00	31.00	0.89	4.90	754.1
LC08600419T	48.00	85.00	2.00	17.50	8.00	0.46	32.00	25.50	0.80	3.40	753.5
LC08600081E	48.00	92.00	2.00	18.00	7.00	0.39	38.00	31.50	0.83	3.50	749.8
ESTON	48.00	83.00	2.00	18.00	16.50	0.92	35.50	30.00	0.85	3.10	739.9

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the green pod height.

Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the green plant height.

Varieties without data were dropped in the field and no data was collected.

Planting Date 05/19/09 Harvest Date: 08/21/09

Agronomic and Yield Data for the Lentil Observation Nursery (0955)

Name	Days to Flower	Days to Maturity	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	100 Seed Weight ..g..	Seed Yield kg/ha
LC08600015E	50.00	92.00	3.00	21.00	13.50	0.64	36.00	29.00	0.81	4.90	732.6
LC08600436E	57.00	92.00	2.00	23.00	14.00	0.61	39.00	35.50	0.91	6.00	707.4
LC08600310T	52.00	92.00	3.00	27.50	17.50	0.64	40.00	29.00	0.73	3.20	705.1
LC08600130P	48.00	85.00	2.00	20.50	4.00	0.20	36.50	14.00	0.38	3.70	697.5
LC08600356T	57.00	92.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.90	685.1
LC08600248T	50.00	90.00	2.00	17.00	14.50	0.85	29.00	26.50	0.91	3.30	682.6
LC0860B105E	48.00	83.00	2.00	20.00	14.00	0.70	43.50	25.00	0.57	3.50	672.7
LC08600295T	52.00	92.00	2.00	24.50	11.50	0.47	35.00	25.00	0.71	2.70	667.7
LC08600052E	43.00	92.00	2.00	18.00	10.00	0.56	32.00	22.00	0.69	5.10	622.2
LC08600029E	57.00	92.00	1.00	22.50	19.00	0.84	37.00	33.00	0.89	4.00	619.5
LC07600434E	43.00	85.00	2.00	20.00	16.50	0.83	36.00	30.00	0.83	4.00	613.7
LC08600199T	57.00	92.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.40	582.5
LC08600100T	57.00	92.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.20	543.4
LC08600025E	57.00	92.00	2.00	22.00	14.00	0.64	33.50	30.00	0.90	4.10	530.8
LC08600247T	50.00	92.00	2.00	17.00	9.00	0.53	31.00	21.00	0.68	3.40	509.1
LC0860B021T	57.00	92.00	1.00	23.00	13.00	0.57	39.50	36.00	0.91	4.10	498.6
LC08600019E	50.00	92.00	1.00	20.00	18.50	0.93	33.50	33.00	0.99	5.00	495.2
LC08600013E	57.00	92.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.60	487.2
LC0860B047T	57.00	92.00	2.00	27.50	15.50	0.56	38.50	25.50	0.66	3.50	481.2
LC08600026E	57.00	92.00	2.00	25.00	18.50	0.74	32.50	30.00	0.92	4.30	480.6
LC0860B049T	59.00	92.00	3.00	25.00	5.00	0.20	44.50	29.00	0.65	3.50	438.8
LC08600320P	52.00	92.00	2.00	24.50	14.00	0.57	42.50	31.50	0.74	3.70	413.4
LC0860B020T	57.00	92.00	2.00	28.50	12.00	0.42	39.00	32.50	0.83	4.10	388.5
LC08600341T	57.00	92.00	3.00	19.00	9.00	0.47	40.00	32.00	0.80	4.00	307.7
LC0860B051T	57.00	92.00	2.00	27.00	15.00	0.56	41.50	32.50	0.78	3.40	276.5
LC08600378T	57.00	92.00	1.00	24.00	13.50	0.56	40.00	28.50	0.71	4.30	274.0
LC0860B038T	57.00	92.00	1.00	27.00	14.00	0.52	40.00	32.50	0.81	3.70	252.1

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the green pod height.
Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the green plant height.
Varieties without data were dropped in the field and no data was collected.

Planting Date 05/19/09 Harvest Date: 08/21/09

Agronomic and Yield Data for the Lentil Observation Nursery (0955)

Name	Days to Flower	Days to Maturity	Pods/ Peduncle	Pod Height	Pod Ht Maturity	Pod Ht Index	Vine Length	Canopy Height	Plant Ht Index	100 Seed Weight	Seed Yield
				..cm..	..cm..		..cm..	..cm..		..g..	kg/ha
LC0860B030T	62.00	92.00	2.00	26.00	19.50	0.75	40.00	34.50	0.86	3.50	218.8
LC08600063E	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LC08600064E	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LC08600065E	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LC0860B116L	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LC0860B119L	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LC08600177T	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LC08600179T	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LC08600278T	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LC08600288T	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LC08600306T	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LC08600327T	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LC08600343T	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LC08600345T	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LC08600379T	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LC08600404T	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LC08600410T	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LC08600416T	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LC0860B029T	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LC0860B065T	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LC0860B075T	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LC0860B084T	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GRAND MEAN	43.42	79.28	2.09	19.22	12.07	0.64	36.67	28.32	0.78	4.28	1174
CV	35.54	34.43	20.61	20.90	31.21	28.96	9.97	20.41	20.08	22.33	39.14
LSD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the green pod height.
Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the green plant height.
Varieties without data were dropped in the field and no data was collected.

Planting Date 05/19/09 Harvest Date: 08/21/09

WINTER LENTIL YIELD TRIALS

Advanced yield trials for fall sown winterhardy Turkish Red lentils, which included 12 advanced breeding lines and the variety Morton, were planted in three locations in WA: Pullman, Rosalia, and Garfield. Reliable yield data was only obtained from the Pullman location. Yields were high at this location, averaging 2350 kg/ha. The highest yield among entries was 3194 kg/ha, for the advanced breeding line LC05600512T, a small seeded red lentil. The second and third highest yields were 3090 kg/ha and 2905 kg/ha, observed for breeding line LC03600232T and the cultivar Morton, respectively. The most promising entry among winter hardy lentil breeding lines is LC03600232T, which has been observed over 9 site/years of advanced yield trials to consistently yield approximately 10% more than Morton. LC03600232T has an oval shape that is characteristic of Turkish Red lentils and is significantly larger than Morton, which has a flatter seed shape. These seed characters may make LC03600232T an acceptable lentil for decorticating and polishing prior to marketing. At least one additional year of testing will be conducted before making a decision whether to propose this line for release as a winter hardy red lentil cultivar.

Agronomic and Yield Data for the Winter Lentil Advanced Yield Nursery (0941)

Name	Days to Flower	Days to Maturity	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	100 Seed Weight ..g..	Seed Yield kg/ha	% of Morton
LC05600512T	239.0	294.0	2.00	16.70	5.80	0.41	44.00	23.70	0.54	3.80	3194	109.9
LC03600232T	242.0	296.0	3.00	23.30	9.20	0.40	49.00	31.00	0.65	4.10	3090	106.4
MORTON_	242.0	295.0	2.00	15.50	8.50	0.56	39.20	28.70	0.74	3.60	2905	100.0
LC02601276T	243.0	294.0	2.00	13.80	9.80	0.71	43.80	28.30	0.64	4.10	2854	98.24
LC03600230T	240.0	294.0	2.00	20.20	8.50	0.44	40.20	30.30	0.78	4.20	2555	87.94
LC05600004T	247.0	292.0	2.00	17.70	7.70	0.43	43.70	28.00	0.64	5.30	2418	83.24
LC05600530T	238.0	289.0	3.00	10.20	7.80	0.32	41.00	24.30	0.60	6.00	2182	75.12
LC05600685T	246.0	294.0	2.00	16.50	7.80	0.48	41.00	26.30	0.65	4.60	2157	74.25
WA8649041	244.0	297.0	2.00	15.00	8.50	0.26	42.50	31.20	0.73	3.50	2138	73.59
LC05600006T	238.0	294.0	2.00	13.30	10.30	0.78	41.30	29.30	0.72	5.30	1993	68.62
LC9440070r	241.0	292.0	2.00	18.20	9.20	0.50	41.80	23.20	0.55	6.10	1974	67.95
LC04600754T	239.0	295.0	1.00	15.50	5.00	0.33	45.00	22.30	0.51	4.50	1600	55.06
LC05600720T	236.0	295.0	2.00	17.80	8.50	0.49	40.70	27.00	0.67	4.60	1486	51.15
GRAND MEAN	241.2	294.0	1.95	16.44	8.21	0.47	42.55	27.21	0.65	4.59	2350	0.00
CV	1.29	0.64	18.07	29.17	21.34	36.86	7.77	11.18	15.63	7.62	18.51	0.00
LSD	4.35	2.62	0.49	6.70	2.45	0.24	4.62	4.25	0.14	0.49	608.7	0.00

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the green pod height at the green pod stage. Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the green plant height at the green plant stage. Planting Date: 10/3/2008. Harvest Date: 07/28/2009.

Agronomic and Yield Data for the Winter Lentil Preliminary Screening Nursery (0945)

Name	Days to Flower	Days to Maturity	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	100 Seed Weight ..g..	Seed Yield kg/ha	% of Morton
LC06600768T	243.0	294.0	2.00	16.00	1.00	0.06	43.50	17.00	0.39	3.90	1526	115.6
MORTON_	241.0	294.0	2.00	12.50	1.00	0.08	38.00	28.50	0.75	2.70	1320	100.0
LC06601535T	234.0	289.0	2.00	17.00	1.50	0.09	39.50	14.50	0.37	3.90	1083	82.02
LC06601529T	248.0	294.0	2.00	16.50	6.00	0.36	44.00	23.50	0.53	4.30	972.0	73.63
LC06600789T	245.0	297.0	2.00	18.50	3.50	0.19	42.50	26.50	0.62	3.10	871.9	66.05
LC06601530T	243.0	294.0	2.00	13.00	1.00	0.08	34.50	15.50	0.45	3.70	839.7	63.61
LC07600058	236.0	294.0	2.00	20.00	1.00	0.05	43.50	16.00	0.37	4.40	788.8	59.75
LC06601534T	234.0	287.0	1.00	15.50	4.00	0.26	32.50	14.50	0.45	3.60	781.5	59.20
LC06601536T	241.0	294.0	1.00	12.00	1.00	0.08	39.00	21.00	0.54	4.20	695.5	52.69
LC06601531T	236.0	294.0	2.00	12.00	3.00	0.25	41.00	12.50	0.30	3.80	674.7	51.11
LC07600014	243.0	290.0	2.00	13.50	1.00	0.07	37.50	19.00	0.51	3.80	618.9	46.88
LC07600085	236.0	294.0	2.00	9.00	1.00	0.11	41.50	12.00	0.29	4.20	447.4	33.89
LC06601532T	243.0	294.0	2.00	14.00	1.00	0.07	38.50	14.50	0.38	4.20	362.7	27.48
LC07600012	243.0	297.0	2.00	12.50	5.00	0.40	36.50	17.50	0.48	4.20	217.7	16.49
GRAND MEAN	240.4	293.3	1.86	14.43	2.21	0.15	39.43	18.04	0.46	3.86	800.0	0.00
CV	1.77	0.92	18.84	19.77	76.20	74.02	8.52	27.21	26.42	11.95	42.63	0.00
LSD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the green pod height at the green pod stage. Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the green plant height at the green plant stage. Planting Date: 10/3/2008. Harvest Date: 07/28/2009.

CHICKPEA YIELD TRIALS

Twenty advanced breeding lines and four check varieties (Sierra, Dwelley, Dylan, and Sawyer) were included in the advanced large Kabuli chickpea yield trials conducted at Genesee, ID, Kendrick, ID and Pullman, WA in 2008. Mean yield of the trial at Spillman Farm (Pullman) was 1549 kg/ha, 1258 kg/ha at Genesee, and 1470 kg/ha at Kendrick. The highest yielding check, Sawyer, averaged 1508 kg/ha over three locations while the lowest yielding check was Sierra (1288 kg/ha). 17 advanced breeding lines had mean yields that were greater than Sierra. For the second consecutive year, the breeding lines CA0469C025C and CA0469C020C were among the top three yielding lines. The highest yielding entry was CA0690B0250C, which averaged 1645 kg/ha. Seed size among the advanced breeding lines ranged from 39 to 61 g/100 seeds.

The 2009 Preliminary Yield Trial conducted at Pullman, WA for large Kabuli chickpeas had 46 advanced breeding lines (37 Café and 9 Spanish White) and the check varieties Dylan, Dwelley, Sawyer and Troy. The highest yielding variety was Dwelley and the lowest was Dylan. The average yield of all entries was 1645 kg/ha. Nine café types had higher yields than Dwelley, while there were five Spanish White lines that had higher yields than Troy, Sawyer, or Dylan. The highest yielding café breeding line, CA0790B0753C, had a mean yield of 2095 kg/ha. The highest yielding Spanish White breeding line, CA0790B0804W, had a mean yield of 1750 kg/ha. Seed size among the preliminary breeding lines ranged from 42 to 62 g/100 seeds.

Breeding lines have been developed that have high yield, improved resistance to *Ascochyta* blight, and early maturity. These lines have been used as parents in crossing blocks with exceptionally large seeded Kabuli lines. The objective of this component of the breeding program is to develop large Kabuli chickpea varieties that are early maturing and have high yield. A constant challenge of the breeding program is to correctly anticipate future market needs in order to develop breeding strategies that will result in timely varieties that meet these changing needs. Currently we are focusing on developing large Kabuli chickpeas that have light color and maintain resistance to *Ascochyta* blight.

Disease screening

Perhaps the most interesting results from successive years of screening for resistance to *Ascochyta* blight is the recent ascendancy in the Advanced Large Kabuli Yield Trials of CA0469C025C and CA04690020C, two café Kabuli lines that exhibit both high yield and resistance to *Ascochyta* blight. Although these two lines are small seeded, their yield potential, disease resistance, and early maturity makes them very promising candidates for release as cultivars for making hummus.

Disease screening in the *Ascochyta* blight nursery at Spillman Farm was very successful in 2009. A new sprinkler irrigation system was constructed and the nursery was artificially infested with inoculum that was produced by mixing together multiple isolates of both pathotypes 1 and 2 of *Ascochyta rabiei*. Plants were scored for disease reaction three times during the growing season. A total of 593 progeny rows were screened for resistance, along with 50 preliminary chickpea breeding lines and twenty advanced breeding lines. A total of 148 progeny rows were selected for seed increases to be followed by their being planted in observation nurseries.

Potential variety releases

CA0469C025C is an early maturing high yielding advanced breeding line with enhanced levels of resistance to Ascochyta blight. During three years of testing in advanced yield trials CA0469C025C has averaged 1549 kg/ha, a yield increase of 21.7% and 25.5% over the cultivars Dwelley and Sierra. CA0469C025C is a high yielding, early maturing variety of small Kabuli chickpea, which is intended for hummus production. CA0469C025C will be considered for release and breeder seed will be produced in 2010.

CA04900421C is a medium sized Kabuli chickpea that has been evaluated over three years of testing in advanced yield trials. In these trials, CA04900421C has yielded an average of 1414 kg/ha, a yield increase of 11.1% and 14.5% over Dwelley and Sierra. This line, which is a candidate to replace Sierra, will be considered for release and breeder seed will be produced in 2010.

Table Location Yield Summary for the Advanced Large Kabuli Chickpea Yield Trial (0981)

Name	Leaf Type	Seed Type	Pullman Seed Yield kg/ha	Kendrick Seed Yield kg/ha	Genesee Seed Yield kg/ha	Mean Seed Yield kg/ha
CA0690B0250C	C	C	1743.60	1779.60	1411.40	1644.90
CA0469C020C	C	C	1508.70	1533.80	1846.30	1629.60
CA0469C025C	C	C	1803.00	1306.10	1756.70	1621.90
CA04900843C	C	C	1741.90	1520.10	1544.00	1602.00
CA0690B0409C	S	C	1713.10	1502.70	1396.80	1537.50
CA0390B007C	C	C	1889.40	1466.50	1240.00	1532.00
SAWYER	S	C	1508.80	1527.20	1488.00	1508.00
CA0469C028C	C	C	1474.40	1559.60	1474.50	1502.80
CA04900808C	S	C	1539.60	1495.50	1450.20	1495.10
CA0690B0427C	C	C	1493.30	1504.00	1309.80	1435.70
DWELLEY	S	C	1486.60	1419.60	1386.00	1430.70
CA04900851C	S	C	1511.40	1538.20	1196.10	1415.20
CA0690B0578C	C	C	1408.70	1528.90	1297.10	1411.60
CA05900092C	C	C	1682.10	1474.40	1026.30	1394.30
CA04900421C	C	C	1305.80	1534.90	1265.70	1368.80
CA0690B0602C	C	C	1729.50	1547.60	830.70	1369.30
CA04900608C	S	C	1537.40	1438.00	1060.90	1345.40
DYLAN	C	W	1485.10	1526.10	1005.10	1338.80
CA0690B0555C	S	C	1588.50	1442.60	943.40	1324.80
CA04900804C	S	C	1367.10	1218.50	1340.80	1308.80
SIERRA	S	C	1404.50	1327.60	1132.10	1288.10
CA0690B0670C	S	C	1156.90	1404.30	1271.60	1277.60
CA0690B0649C	C	C	1492.40	1356.30	951.30	1266.70
CA0690B0307C	C	C	1607.50	1319.00	576.30	1167.60
GRAND MEAN			1549.13	1469.63	1258.39	1425.72
CV			10.44	10.97	21.35	14.28
LSD			265.83	265.04	441.52	189.76
Residual			26160.55	26006.05	72169.87	41445.49

Leaf Type: C = compound leaf, S = simple leaf type. Seed type; W = white seed type, C = cafe seed type
Yield data are means of three replications at each location.

Agronomic Data for the Advanced Large Kabuli Chickpea Yield Trial (0981)

Name	Blight	Days to Flower	Days to Maturity	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	100 Seed Weight ..g..
CA0690B0250C		49.00	112.0	29.00	24.80	0.87	58.00	53.00	0.92	54.40
CA0469C020C		43.00	104.0	18.20	15.30	0.86	49.00	42.00	0.87	40.30
CA0469C025C		42.00	106.0	19.30	18.20	0.95	46.00	44.00	0.96	39.20
CA04900843C		49.00	99.30	28.50	23.70	0.82	51.00	46.00	0.90	60.70
CA0690B0409C		47.00	98.30	27.00	20.70	0.78	50.00	47.00	0.94	53.40
CA0390B007C		50.00	112.0	30.20	24.00	0.80	56.00	50.00	0.90	53.00
SAWYER		49.00	102.0	25.30	20.50	0.82	48.00	44.00	0.92	42.40
CA0469C028C		53.00	102.0	33.80	28.20	0.85	62.00	56.00	0.90	40.60
CA04900808C		44.00	101.0	27.20	23.30	0.86	50.00	45.00	0.91	53.40
CA0690B0427C		50.00	103.0	22.00	20.70	0.95	50.00	46.00	0.92	51.60
DWELLEY		53.00	99.30	27.70	23.70	0.87	52.00	48.00	0.93	52.50
CA04900851C		53.00	95.00	31.70	27.80	0.88	53.00	49.00	0.93	54.60
CA0690B0578C		47.00	102.0	25.00	21.70	0.87	53.00	46.00	0.87	49.40
CA05900092C		53.00	112.0	26.00	22.80	0.89	49.00	44.00	0.89	53.80
CA04900421C		43.00	102.0	24.20	20.00	0.84	46.00	43.00	0.94	49.70
CA0690B0602C		50.00	102.0	27.30	20.70	0.76	49.00	47.00	0.96	51.30
CA04900608C		49.00	99.70	29.70	25.30	0.84	50.00	46.00	0.92	58.80
DYLAN		44.00	103.0	21.30	18.70	0.87	47.00	40.00	0.87	57.50
CA0690B0555C		52.00	101.0	29.80	22.30	0.76	51.00	48.00	0.94	52.70
CA04900804C		47.00	95.00	26.70	21.80	0.83	48.00	46.00	0.95	47.90
SIERRA		52.00	102.0	27.20	23.30	0.87	49.00	44.00	0.90	52.60
CA0690B0670C		53.00	102.0	28.00	23.30	0.84	52.00	48.00	0.92	49.80
CA0690B0649C		49.00	112.0	24.30	18.20	0.77	52.00	47.00	0.90	46.10
CA0690B0307C		47.00	109.0	27.70	23.70	0.85	56.00	48.00	0.85	54.10
GRAND MEAN		48.71	103.1	26.54	22.19	0.85	51.06	46.53	0.91	50.83
CV		4.26	2.60	8.84	11.49	9.43	4.73	5.67	5.72	2.71
LSD		3.41	4.41	3.86	4.19	0.13	3.97	4.33	0.09	2.27
Residual		4.30	7.18	5.51	6.50	0.01	5.82	6.95	0.00	1.90

Planting Date: 05/18/09. Harvest Date: 09/09/09.

Ascochyta Blight Scores: 1 = Highly Resistant, 3 = Resistant, 5 = Tolerant, 7 = Susceptible, 9 = Highly Susceptible

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the green pod height.

Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the green plant height at the green plant stage.

Agronomic data are means of three replications at Pullman, WA

Agronomic and Yield Data for the Preliminary Large Kabuli Chickpea Yield Trial (0983)

Name	Days to Flower	Days to Maturity	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	100 Seed Weight ..g..	Seed Yield kg/ha	% of Dwelley
CA0790B0753C	48.00	109.0		22.00	18.50	0.85	53.00	46.00	0.88	47.60	2095	113.4
CA0790B0547C	51.00	102.0		28.30	23.00	0.81	51.00	49.00	0.96	53.30	2006	108.6
CA0790B0054C	48.00	108.0		30.30	26.70	0.88	55.00	52.00	0.95	56.30	1984	107.4
CA0790B0155C	48.00	101.0		28.20	23.80	0.85	51.00	46.00	0.90	60.30	1928	104.3
CA0790B0034C	50.00	104.0		28.30	24.70	0.87	51.00	45.00	0.88	57.40	1924	104.1
CA0790B0043C	49.00	104.0		31.30	26.70	0.85	63.00	56.00	0.90	55.50	1899	102.8
CA0790B0733C	48.00	111.0		25.20	21.30	0.84	48.00	45.00	0.93	51.00	1892	102.4
CA0790B0549C	49.00	102.0		27.80	22.50	0.81	50.00	43.00	0.86	50.60	1884	102.0
CA0790B0042C	48.00	105.0		32.00	26.80	0.83	61.00	57.00	0.94	47.40	1876	101.5
DWELLEY	51.00	102.0		31.00	27.80	0.90	55.00	50.00	0.92	54.30	1848	100.0
CA0790B0642C	49.00	103.0		23.50	16.80	0.72	52.00	44.00	0.85	58.80	1824	98.71
CA0790B0053C	46.00	105.0		34.00	27.30	0.81	63.00	58.00	0.91	58.90	1779	96.29
CA0790B0804W	49.00	105.0		27.00	24.50	0.91	53.00	46.00	0.86	60.00	1750	94.72
CA0790B0035C	49.00	101.0		28.50	21.20	0.75	52.00	49.00	0.94	56.60	1728	93.54
CA0790B0099C	48.00	104.0		26.50	22.80	0.86	55.00	51.00	0.93	62.40	1726	93.41
CA0790B0763C	45.00	109.0		30.20	23.70	0.79	53.00	47.00	0.89	60.20	1721	93.13
CA0790B0742C	47.00	109.0		25.20	21.00	0.83	52.00	46.00	0.89	47.70	1698	91.92
CA0790B0779C	48.00	98.30		31.50	22.00	0.70	59.00	51.00	0.86	50.30	1681	90.98
CA0790B0149C	47.00	102.0		24.30	21.50	0.88	55.00	46.00	0.84	51.80	1675	90.67
CA0790B0008C	50.00	105.0		33.20	27.70	0.83	70.00	63.00	0.90	56.90	1673	90.56
CA0790B0808W	49.00	108.0		27.80	23.30	0.83	49.00	44.00	0.90	58.60	1667	90.20
CA0790B0152W	50.00	99.70		25.70	22.50	0.88	53.00	45.00	0.86	51.90	1643	88.90
CA0790B0640C	49.00	108.0		24.00	19.50	0.83	50.00	44.00	0.89	59.60	1633	88.36
CA0790B0630C	48.00	106.0		24.70	20.50	0.83	50.00	43.00	0.87	58.60	1620	87.68
CA0790B0439C	48.00	111.0		30.70	28.20	0.92	65.00	57.00	0.88	58.20	1615	87.40
CA0790B0782C	52.00	104.0		30.80	25.00	0.82	53.00	48.00	0.92	49.40	1614	87.35

Ascochyta Blight Scores: 1 = Highly Resistant, 3 = Resistant, 5 = Tolerant, 7 = Susceptible, 9 = Highly Susceptible

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the green pod height.

Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the green plant height at the green plant stage.

Rep Nodes = average number of reproducing nodes to a plant.

Agronomic data are means of three replications at Pullman, WA. Planting Date 05/19/09. Harvest Date: 09/09/09.

Agronomic and Yield Data for the Preliminary Large Kabuli Chickpea Yield Trial (0983)

Name	Days to Flower	Days to Maturity	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	100 Seed Weight ..g..	Seed Yield kg/ha	% of Dwelley
CA0790B0810W	49.00	109.0		24.20	22.20	0.92	50.00	43.00	0.87	59.80	1607	86.97
CA0790B0083C	47.00	99.70		31.50	25.30	0.80	53.00	47.00	0.89	57.10	1598	86.50
CA0790B0709C	49.00	101.0		26.80	23.50	0.88	52.00	46.00	0.89	49.20	1597	86.43
CA0790B0754C	48.00	103.0		24.80	20.50	0.83	55.00	46.00	0.83	54.60	1591	86.13
CA0790B0807W	49.00	106.0		27.00	21.00	0.78	49.00	40.00	0.82	56.90	1577	85.36
CA0790B0095C	46.00	106.0		34.00	26.00	0.76	53.00	50.00	0.94	62.30	1568	84.89
CA0790B0102C	48.00	98.00		28.00	21.50	0.76	50.00	43.00	0.85	57.40	1553	84.05
CA0790B0689C	49.00	98.70		28.80	24.30	0.84	51.00	46.00	0.90	43.90	1541	83.38
CA0790B0093C	47.00	111.0		31.30	23.30	0.74	56.00	49.00	0.88	58.10	1540	83.33
CA0790B0009C	50.00	101.0		29.70	24.20	0.82	58.00	53.00	0.92	44.20	1539	83.30
TROY	46.00	104.0		27.20	23.50	0.87	48.00	42.00	0.88	59.10	1530	82.80
CA0690B0268W	47.00	109.0		24.70	20.30	0.83	52.00	46.00	0.88	58.10	1506	81.49
CA0790B0143C	45.00	101.0		24.70	21.30	0.87	60.00	53.00	0.89	54.60	1504	81.42
CA0790B0050C	49.00	105.0		33.50	27.50	0.82	59.00	55.00	0.94	54.40	1503	81.36
CA0790B0010W	49.00	102.0		29.80	27.30	0.92	61.00	54.00	0.88	45.90	1494	80.88
SAWYER	46.00	98.00		30.20	21.70	0.72	51.00	42.00	0.83	42.30	1474	79.79
CA0790B0699C	48.00	103.0		30.20	25.00	0.83	52.00	48.00	0.92	53.20	1469	79.52
CA0790B0150W	47.00	102.0		26.30	23.00	0.87	45.00	39.00	0.86	57.20	1443	78.10
DYLAN	42.00	103.0		24.00	20.70	0.86	48.00	42.00	0.86	57.20	1413	76.49
CA0790B0100C	48.00	102.0		26.20	21.50	0.82	50.00	43.00	0.86	57.60	1405	76.06
CA0790B0378C	47.00	111.0		28.00	26.00	0.93	54.00	47.00	0.86	61.00	1394	75.45
CA0690B0397W	49.00	106.0		23.20	19.00	0.83	46.00	39.00	0.86	61.50	1361	73.67
CA0790B0024C	49.00	102.0		32.20	26.00	0.81	56.00	50.00	0.90	49.10	1332	72.10
CA0790B0738C	45.00	103.0		22.80	16.80	0.74	45.00	37.00	0.81	51.90	1309	70.84
GRAND MEAN	48.11	104.2		28.02	23.22	0.83	53.54	47.44	0.89	54.80	1645	0.00
CV	4.79	3.60		9.09	12.18	11.27	6.57	5.83	6.35	3.17	13.33	0.00

Ascochyta Blight Scores: 1 = Highly Resistant, 3 = Resistant, 5 = Tolerant, 7 = Susceptible, 9 = Highly Susceptible

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the green pod height.

Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the green plant height at the green plant stage.

Rep Nodes = average number of reproducing nodes to a plant.

Agronomic data are means of three replications at Pullman, WA. Planting Date 05/19/09. Harvest Date: 09/09/09.

Agronomic and Yield Data for the Preliminary Large Kabuli Chickpea Yield Trial (0983)

Name	Days to Flower	Days to Maturity	Pods/ Peduncle	Pod Height	Pod Ht Maturity	Pod Ht Index	Vine Length	Canopy Height	Plant Ht Index	100 Seed Weight	Seed Yield	% of Dwelley
				..cm..	..cm..		..cm..	..cm..		..g..	kg/ha	
LSD	3.74	6.08		4.13	4.58	0.15	5.70	4.48	0.09	2.82	355.2	0.00
Residual	5.32	14.08		6.49	8.00	0.01	12.36	7.64	0.00	3.03	48044	0.00

Ascochyta Blight Scores: 1 = Highly Resistant, 3 = Resistant, 5 = Tolerant, 7 = Susceptible, 9 = Highly Susceptible

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the green pod height.

Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the green plant height at the green plant stage.

Rep Nodes = average number of reproducing nodes to a plant.

Agronomic data are means of three replications at Pullman, WA. Planting Date 05/19/09. Harvest Date: 09/09/09.

Agronomic and Yield Data for the Preliminary Large Kabuli Chickpea Screening Nursery (0985)

Name	Leaf Type	Seed Type	Days to Flower	Days to Maturity	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	100 Seed Weight ..g..	Seed Yield kg/ha
CA0890B0496C	S	C	49.00	110.0		29.00	26.50	0.91	55.00	52.00	0.95	65.50	2552
CA0890B0435C	S	C	47.00	103.0		37.00	33.50	0.91	73.00	61.00	0.84	65.10	2170
CA0890B0429C	C	C	49.00	110.0		31.00	19.50	0.63	62.00	52.00	0.84	63.50	2077
CA0890B0427C	C	C	47.00	110.0		29.00	24.50	0.84	54.00	50.00	0.93	56.00	2063
CA0890B0523C	C	C	49.00	110.0		34.00	32.00	0.94	65.00	55.00	0.85	50.80	2051
CA0890B0561C	C	C	47.00	110.0		25.00	20.00	0.80	45.00	41.00	0.91	54.40	2022
DYLAN	C	W	49.00	103.0		25.00	22.00	0.88	51.00	42.00	0.82	58.20	2012
DWELLEY	S	C	51.00	100.0		32.00	29.50	0.92	46.00	44.00	0.96	56.50	1958
CA0890B0437W	C	W	49.00	110.0		32.00	24.00	0.75	62.00	53.00	0.85	47.70	1941
CA0890B0074C	C	C	49.00	110.0		30.00	25.00	0.83	54.00	42.00	0.78	60.20	1886
CA0890B0084C	C	C	49.00	100.0		28.00	22.50	0.80	53.00	44.00	0.83	59.20	1843
CA0890B0556D	C	D	49.00	100.0		24.00	20.00	0.83	51.00	43.00	0.84	19.00	1802
CA0890B0531C	C	C	47.00	110.0		26.50	22.00	0.83	50.00	42.00	0.84	54.90	1772
CA0890B0555D	C	D	49.00	98.00		20.50	16.00	0.78	44.00	34.00	0.77	15.70	1763
CA0890B0356W	C	W	49.00	103.0		26.00	25.00	0.96	56.00	50.00	0.89	61.40	1756
CA0890B0498C	C	C	49.00	110.0		32.00	28.50	0.89	51.00	43.00	0.84	57.20	1578
CA0890B0113W	C	W	51.00	110.0		20.00	16.00	0.80	46.00	43.00	0.93	54.00	1527
CA0890B0589C	C	C	49.00	100.0		28.00	23.00	0.82	48.00	43.00	0.90	51.70	1447
SIERRA	S	C	51.00	100.0		30.00	24.50	0.82	45.00	39.00	0.87	51.70	1441
CA0890B0103W	C	W	49.00	110.0		28.00	18.00	0.64	52.00	50.00	0.96	59.70	1431
CA0890B0434C	C	C	47.00	110.0		26.50	22.50	0.85	44.00	41.00	0.93	51.30	1420
CA0890B0393W	C	W	49.00	110.0		26.50	22.50	0.85	47.00	42.00	0.89	60.80	1397
CA0890B0438W	C	W	49.00	110.0		32.00	18.50	0.58	63.00	50.00	0.79	51.50	1395
CA0890B0575C	S	C	47.00	110.0		31.50	23.50	0.75	51.00	43.00	0.84	43.90	1381
CA0890B0085W	C	W	49.00	110.0		31.50	27.00	0.86	51.00	46.00	0.90	61.80	1378
CA0890B0581C	C	C	47.00	110.0		25.00	21.50	0.86	49.00	43.00	0.88	45.70	1340
CA0890B0101W	C	W	49.00	110.0		25.00	19.00	0.76	51.00	48.00	0.94	62.20	1315

Ascochyta Blight Scores: 1 = Highly Resistant, 3 = Resistant, 5 = Tolerant, 7 = Susceptible, 9 = Highly Susceptible

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the green pod height.

Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the green plant height at the green plant stage.

Agronomic data are means of three replications at Pullman, WA. Planting Date 05/20/09. Harvest Date: 09/10/09

Agronomic and Yield Data for the Preliminary Large Kabuli Chickpea Screening Nursery (0985)

Name	Leaf Type	Seed Type	Days to Flower	Days to Maturity	Pods/ Peduncle	Pod Height ..cm..	Pod Ht Maturity ..cm..	Pod Ht Index	Vine Length ..cm..	Canopy Height ..cm..	Plant Ht Index	100 Seed Weight ..g..	Seed Yield kg/ha
CA0890B0443C	C	C	51.00	110.0		32.00	25.50	0.80	57.00	45.00	0.79	58.20	1277
CA0890B0286D	C	D	47.00	100.0		17.50	14.00	0.80	36.00	32.00	0.89	17.50	1249
CA0890B0130C	C	C	49.00	110.0		23.50	22.00	0.94	47.00	44.00	0.94	55.50	1212
CA0890B0657W	C	W	49.00	110.0		27.50	23.50	0.85	52.00	47.00	0.90	51.70	1210
CA0890B0526D	C	D	51.00	110.0		31.50	25.50	0.81	53.00	42.00	0.79	29.50	1205
CA0890B0116W	C	W	51.00	110.0		22.50	17.00	0.76	47.00	46.00	0.98	55.50	1201
CA0890B0283D	C	D	47.00	100.0		19.50	10.00	0.51	41.00	35.00	0.85	16.40	1198
CA0890B0489C	C	C	51.00	110.0		43.50	33.00	0.76	70.00	64.00	0.91	48.60	1155
CA0890B0648W	C	W	49.00	110.0		28.50	25.50	0.89	52.00	44.00	0.85	62.80	1149
CA0890B0551C	C	C	49.00	110.0		23.00	20.00	0.87	50.00	45.00	0.90	53.60	1149
CA0890B0628W	C	W	49.00	110.0		29.00	20.50	0.71	50.00	43.00	0.86	60.20	1061
CA0890B0289D	C	D	47.00	96.00		18.50	11.00	0.59	41.00	33.00	0.80	15.20	1000
CA0890B0665C	C	C	51.00	110.0		33.00	28.00	0.85	67.00	64.00	0.96	66.60	992.1
CA0890B0290D	C	D	47.00	96.00		20.00	9.50	0.48	51.00	32.00	0.63	16.10	932.4
CA0890B0287D	C	D	47.00	96.00		18.00	9.00	0.50	39.00	33.00	0.85	17.30	845.3
CA0890B0281D	C	D	47.00	93.00		16.00	12.50	0.78	37.00	34.00	0.92	15.70	741.1
CA0890B0293D	C	D	47.00	100.0		19.00	11.50	0.61	47.00	34.00	0.72	17.30	741.1
CA0890B0288D	C	D	47.00	96.00		17.50	10.50	0.60	39.00	34.00	0.87	14.70	642.5
CA0890B0554D	C	D	49.00	100.0		18.50	18.00	0.97	44.00	39.00	0.89	16.50	632.3
GRAND MEAN			48.70	105.7		26.60	21.15	0.79	50.85	44.04	0.87	46.27	1442
CV			2.84	5.27		21.82	29.04	15.60	16.00	17.41	7.75	38.54	30.68
LSD			0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Residual			1.91	31.06		33.69	37.73	0.02	66.22	58.78	0.00	318.1	*****

Ascochyta Blight Scores: 1 = Highly Resistant, 3 = Resistant, 5 = Tolerant, 7 = Susceptible, 9 = Highly Susceptible

Pod height was measured at the green pod stage and at harvest maturity. Pod height index was determined by dividing pod height at harvest maturity by the green pod height.

Plant height was measured at the green plant stage and at harvest maturity. Plant height index was determined by dividing plant height at harvest maturity by the green plant height at the green plant stage.

Agronomic data are means of three replications at Pullman, WA. Planting Date 05/20/09. Harvest Date: 09/10/09