

Western Regional Cool Season Legume Evaluation Trials & Nurseries - 2006



Prepared by
Grain Legume Genetics and Physiology Research Unit

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Project Description and Objectives

New varieties of cool season food legumes are needed by the expanding industry in the northern plains region as well as the Pacific Northwest. Candidate varieties are being developed by the USDA-ARS Grain Legume Genetics program located at Washington State University; however, the germplasm being generated needs to be evaluated in all production regions. Specifically, new varieties are needed that are better adapted to the northern plains and with improved disease resistance, yields and quality. Potential new varieties of dry peas, lentils and chickpeas were evaluated through a coordinated set of trials, the Western Regional Evaluation Trials, in the major production zones of the northern plains and the Pacific Northwest. These trials compared currently available varieties to the most recent material from the USDA-ARS breeding program in uniform replicated trials. Winter hardy pea and lentil selections with high yield potential were also evaluated. In addition to evaluation of advanced breeding lines at locations throughout the northern plains and the Pacific Northwest, nurseries were established to evaluate early-generation segregating breeding populations of chickpea and spring and winter pea and lentil in North Dakota and to make selections for resistance to prevalent diseases, agronomic adaptation and suitable plant types. Screening winter pea and lentil breeding populations in North Dakota will provide an opportunity to identify selections with increased winter hardiness. The goal of this project is to provide producers throughout the U.S. with higher yielding disease resistant varieties that will increase overall farm productivity and profitability while expanding the use of grain legumes in crop rotations. Data and information generated are being made available through websites, meetings, conferences and in printed documents.

- Objective 1: Identify regions of adaptation for new cultivars and breeding lines through establishment of a network of Western Regional Evaluation Trials in the target environments. Informed selection of varieties for production depends on an understanding of how environments differentiate among genetic material. This information is also important to plant breeders in order to optimize the choice of parents, methods of selection and the extent of yield testing in the target region.
- Objective 2: Establish a satellite breeding program in North Dakota to identify early generation breeding lines for potential use in the northern plains region. A range of diseases and environmental stresses are specific to the northern plains region and therefore the prospects for successful selection of adapted high yielding disease resistant germplasm would be most effective if carried out in the target region.

During the 2006 crop year, 69 Western Regional Trials were established at 18 sites in 10 states including 14 for spring dry pea, 8 for spring lentil, 21 for chickpea, 15 for winter dry pea, and 11 for winter lentil. Several sites were lost due to various environmental factors including hail and severe cold temperatures resulting in poor stands in the winter legume trials. Overall, data were collected and received for 45 of the 69 trials. In addition, selections were made in the segregating populations of lentil for plant habit, resistance to lodging and disease resistance.

Spring Pea Trials

Twelve spring pea entries in the Western Regional Yield Trial were evaluated at 13 locations across six states in 2006 (Table 1). The entries comprised two checks and ten breeding lines including seven green and three yellow cotyledon types. The checks were 'Stirling' (green) and PS01102958 (yellow). The trials were conducted primarily under dryland conditions; however, one trial in Nebraska was irrigated. Information regarding experimental design, location and specific observations for some of the locations are included below.

Overall means are presented for each entry based only on those locations including all entries (Table 2). Average yield for the checks (Stirling and PS01102958) was 2247 lb/a. Stirling, a recently released upright green cotyledon variety, produced an average yield of 2165 lb/a. Yield for 'Medora', new green cotyledon upright variety tested at five locations averaged 1928 lb/a. The highest yielding breeding lines were PS0110767 (green) (2666 lb/a) followed by PS02101229 (yellow) (2567 lb/a) and PS02101119 (yellow) (2541 lb/a).

Table 1. Summary of Locations Participating in the 2006 Spring Pea Western Regional Yield Trial.

Location	Contact	Conditions	Nurseries		
			Seed Sent	Data Returned	Data Lost
<i>Idaho</i>					
Moscow	Stephen Guy	Dryland	✓	✓	
Nezperce	Stephen Guy	Dryland	✓	✓	
Tammany	Larry Smith	Dryland	✓		✓
<i>Montana</i>					
Kalispel	Duane Johnson, Louise Strang	Dryland	✓	✓	
Moccasin	Chengci Chen, Karnes Neill	Dryland	✓	✓	
<i>Nebraska</i>					
Sydney	David Baltensperger, Glen Frickel	Irrigated	✓	✓	
<i>North Dakota</i>					
Carrington	Blaine Schatz, Steve Zwinger	Dryland	✓	✓	
Hettinger	Eric Eriksmoen	Dryland	✓	✓	
Minot	Mark Halvorson	Dryland	✓	✓	
Williston	Neil Riveland	Dryland	✓		✓
<i>South Dakota</i>					
Hayes	John Rickertsen	Dryland	✓	✓	
Wall	John Rickertsen	Dryland	✓	✓	
<i>Wyoming</i>					
Torrington	Jack Cecil	Dryland	✓		✓
Grand Totals			13	10	3

Table 2. Location Yield Summary (lbs/a) for Western Regional Spring Pea Trials

Location	PS0110745	PS0110767	PS0110805	PS02100026	PS02100128	PS0010836	PS01102958	PS02101119	PS02101137	PS02101229	Medora	Stirling
Moscow, ID		2700	2620	2670	2710	2690	2780				1840	2610
Nezperce, ID		1550	1430	1080	1590	1510	1020				1190	1750
Kalispell, MT	2935	3451	3074	2944	3186	2949	3038	3429	3905	3485		2740
Mocassin, MT	1622	1884	1695	1852	1959	2032	1813	2036	2037	2227		2001
Sydney, NE (Irr)	1700	1650	2070	2260	2290	1760	1900	2430	1320	2750		1790
Carrington, ND	2718	3000	2562	2406	2646	3246	3120	3270	3222	3330	2454	3054
Hettinger, ND	1122	1278	1446	1122	1398	1422	1614	1476	1344	1420		1266
Minot, ND	2316	2178	2442	1992	2508	2670	2748	2934	2730	2664	2262	2436
Hayes, SD	768	912	714	660	912	930	960	1314	1008	942	966	834
Wall, SD	1410	1446	1410	1422	1266	1872	1692	1854	1740	1836	1722	1548
Grand Mean	1824	1975	1927	1832	2021	2110	2111	2343	2163	2332		1959

Grand mean taken from locations with a complete set of data. Medora was removed from the grand mean calculations due to lack of seed for some locations.

Table 3. Post Harvest Quality Evaluations of Dry Pea Lines in the Western Regional Dry Pea Trials - 2006

Cultivar	Weight 100	Water	Hard	Conductivity	Post Soak	Post	Cooking	Post Cook			
	Seeds	Uptake	Seed		Seed	Soak		Time	Seed	Post Cook Broth	Seed Coat
	..g..	..%..	..%..	..us/g..	Color	Bleach	..minutes..	Color	Color	Separates	Mush
Medora	21.23	105.7	0.0	24.02	G	1.3	20.7	G	5	N	N
PS0110745	20.37	111.7	0.7	25.19	G	2.3	20.0	G	5	N	N
PS0110767	21.87	106.5	0.0	22.87	G	1.0	22.7	G	5	N	N
PS0110805	20.77	105.0	0.0	36.60	G	0.0	23.3	G	5	N	N
PS02100026	22.63	109.3	0.0	52.58	G	2.3	21.3	G	5	Y	N
PS02100128	19.23	109.5	0.0	43.15	G	0.3	20.0	G	5	N	N
Stirling	19.37	107.9	0.0	24.44	G	2.3	20.7	G	5	N	N
Delta	20.97	108.4	0.0	26.71	G	0.0	23.3	G	5	Y	N
PS0010836	25.20	105.4	0.0	40.08	G	0.0	19.3	G	5	N	N
PS01102958	22.57	103.1	0.7	25.57	G	0.0	19.3	G	5	N	N
PS02101119	25.40	101.2	0.0	32.15	G	0.0	18.7	F	6	Y	N
PS02101137	23.97	104.7	0.0	39.22	G	0.0	18.0	G	5	N	N
PS02101229	21.93	107.3	0.0	39.97	G	0.0	19.3	G	5	N	N

Seed used for post harvest quality evaluations was grown at Pullman, WA in 2006.

Conductivity is expressed as microsiemens per gram of seed.

Post Seed Soaking Color Evaluation: G = Good; F = Fair; P = Poor.

Cooking time determined by removing a small sub-sample at two minute intervals and mashed with a fork until deemed cooked.

Post Cooking Seed Color is rated as: G = Good; F = Fair; P = Poor.

Post Cooking Broth Color is rated as: 4 = dark; 5 = Light; 6 = Muddy.

Seed Coat Separates From Cotyledon (Sloughs) During Cooking: Y = Yes; N = No.

Seed Cooks To Mush (Looses Rigidity And Individual Seed Identity): Y = Yes; N = No.

Cooking tests conducted on each of three seed lots soaked for 20 hours.

All data in the above table is the average of three 100 seed sub-samples.

Table 4. Green dry pea variety performance results at Moscow, ID - 2006.
Data from Stephen Guy, University of Idaho.

Variety / Selection	Seed Yield lb/acre	Seed Weight g/100	Vine Length inches	Canopy Height inches	Erect Index*
Aragorn	2620	21.3	29	29	1.0
Ariel	2560	18.1	29	29	1.0
Bluebird	2490	23.6	21	21	1.0
Camry	2500	23.4	21	21	1.0
Columbian	2050	20.2	35	11	0.3
Cooper	2070	25.3	27	27	1.0
Cruiser	2450	20.1	28	27	0.9
Joel	2500	22.2	47	14	0.3
Karita	2750	25.8	28	28	1.0
K2	2550	20.8	28	28	1.0
Medora	1840	18.3	33	33	1.0
Monarch	2520	21.2	23	22	0.9
Pacifica	2810	22.0	31	22	0.7
Stirling	2610	20.2	25	24	0.9
Stratus	2580	23.0	22	22	1.0
Toledo	2440	24.8	27	27	1.0
PS 0110805	2620	19.8	28	25	0.9
PS 02100026	2670	22.6	25	21	0.8
PS 02100128	2710	19.0	29	29	1.0
PS 0110767	2700	22.3	27	27	1.0
Pro 031-7053	2820	20.4	29	28	0.9
Average	2520	21.6	28	25	0.9
LSD (0.10)	172	0.7	4	4	0.1
CV (%)	6	2.6	13	13	10.0

* means canopy height/vine length; 1.0=upright

Table 5. Yellow dry pea variety performance results at Moscow, ID - 2006.
Data from Stephen Guy, University of Idaho.

Variety / Selection	Seed Yield lb/acre	Seed Weight g/100	Vine Length inches	Canopy Height inches	Erect Index*
Carousel	2610	24.3	30	30	1.0
Delta	2630	23.0	29	28	0.9
Rex	2850	24.0	32	15	0.5
Shawnee	2560	21.8	44	11	0.3
Swing	2820	22.4	29	29	1.0
Topeka	2830	23.1	24	24	1.0
Universal	3010	22.2	31	31	1.0
PS 0010836	2690	23.7	23	23	1.0
PS 01102958	2780	23.0	26	26	1.0
Average	2750	23.1	30	24	0.9
LSD (0.10)	172	0.7	4	4	0.1
CV (%)	6	2.6	13	13	10.0

* means canopy height/vine length; 1.0=upright

Table 6. Green dry pea variety performance results at Nezperce, ID - 2006.
Data from Stephen Guy, University of Idaho.

Variety / Selection	Seed Yield lb/acre	Seed Weight g/100	Vine Length inches	Canopy Height inches	Erect Index*
Aragorn	1640	17.3	27	22	0.8
Ariel	1510	14.6	22	20	0.9
Bluebird	1750	19.5	20	14	0.7
Camry	1370	19.4	17	14	0.9
Columbian	1360	15.4	36	9	0.3
Cooper	1030	20.0	23	21	0.9
Cruiser	1580	16.0	24	21	0.8
Joel	1350	17.8	42	9	0.2
Karita	1670	21.8	24	20	0.8
K2	1560	16.4	24	22	0.9
Medora	1190	15.4	28	26	0.9
Monarch	1410	16.0	20	16	0.8
Pacifica	1650	17.9	25	21	0.8
Stirling	1750	17.0	22	18	0.8
Stratus	1640	19.1	20	16	0.8
Toledo	1480	20.1	26	23	0.8
PS 0110805	1430	16.0	25	22	0.8
PS 02100026	1080	18.5	21	16	0.7
PS 02100128	1590	15.1	25	22	0.9
PS 0110767	1550	17.3	22	20	0.8
Pro 031-7053	1370	15.4	20	18	0.8
Average	1470	17.4	24	19	0.8
LSD (0.10)	209	0.8	4	3	0.1
CV (%)	12	3.9	12	13	12.3

* means canopy height/vine length; 1.0=upright

Table 7. Yellow dry pea variety performance results at Nezperce, ID - 2006.
Data from Stephen Guy, University of Idaho.

Variety / Selection	Seed Yield lb/acre	Seed Weight g/100	Vine Length inches	Canopy Height inches	Erect Index*
Carousel	1620	19.9	27	25	0.9
Delta	1840	19.2	25	23	0.9
Rex	1700	20.1	25	12	0.5
Shawnee	1680	18.0	46	7	0.2
Swing	1440	17.9	26	23	0.8
Topeka	1680	18.7	21	20	0.9
Universal	1800	18.7	24	23	0.9
PS 0010836	1510	20.6	20	18	0.8
PS 01102958	1020	19.3	21	20	0.9
Average	1590	19.2	26	19	0.8
LSD (0.10)	209	0.8	4	3	0.1
CV (%)	12	3.9	12	13	12.3

* means canopy height/vine length; 1.0=upright

Table 8. Combined green dry pea variety performance data for Nezperce and Moscow, ID - 2006.

Variety or Selection	Seed Yield			Seed Weight			Average of 2 sites	
	Nezperce	Moscow	Average	Nezperce	Moscow	Average	Vine Length	Canopy Height
	-----lb/acre-----			-----g/100-----			inches	inches
Aragorn	1640	2620	2130	17.3	21.3	19.3	28	26
Ariel	1510	2560	2040	14.6	18.1	16.4	26	25
Bluebird	1750	2490	2120	19.5	23.6	21.6	21	18
Camry	1370	2500	1940	19.4	23.4	21.4	19	18
Columbian	1360	2050	1710	15.4	20.2	17.8	36	10
Cooper	1030	2070	1550	20.0	25.3	22.7	25	24
Cruiser	1580	2450	2020	16.0	20.1	18.1	26	24
Joel	1350	2500	1930	17.8	22.2	20.0	45	12
Karita	1670	2750	2210	21.8	25.8	23.8	26	24
K2	1560	2550	2060	16.4	20.8	18.6	26	25
Medora	1190	1840	1520	15.4	18.3	16.9	31	30
Monarch	1410	2520	1970	16.0	21.2	18.6	22	19
Pacifica	1650	2810	2230	17.9	22.0	20.0	28	22
Stirling	1750	2610	2180	17.0	20.2	18.6	24	21
Stratus	1640	2580	2110	19.1	23.0	21.1	21	19
Toledo	1480	2440	1960	20.1	24.8	22.5	27	25
PS 0110805	1430	2620	2030	16.0	19.8	17.9	27	24
PS 02100026	1080	2670	1880	18.5	22.6	20.6	23	19
PS 02100128	1590	2710	2150	15.1	19.0	17.1	27	26
PS 0110767	1550	2700	2130	17.3	22.3	19.8	25	24
Pro 031-7053	1370	2820	2100	15.4	20.4	17.9	25	23
Average	1470	2520	2000	17.4	21.6	19.5	26	22
LSD (0.10)	209	172	135	0.8	0.7	0.5	3	2
CV (%)	12	6	-	3.9	2.6	-	-	-

Table 9. Combined yellow dry pea variety performance data for Nezperce and Moscow, ID - 2006.

Variety or Selection	Seed Yield			Seed Weight			Average of 2 sites	
	Nezperce	Moscow	Average	Nezperce	Moscow	Average	Vine Length	Canopy Height
	-----lb/acre-----			-----g/100-----			inches	inches
Carousel	1620	2610	2120	19.9	24.3	22.1	29	28
Delta	1840	2630	2240	19.2	23.0	21.1	27	26
Rex	1700	2850	2280	20.1	24.0	22.1	29	14
Shawnee	1680	2560	2130	18.0	21.8	19.9	45	9
Swing	1440	2820	2130	17.9	22.4	20.2	28	26
Topeka	1680	2830	2250	18.7	23.1	20.9	23	22
Universal	1800	3010	2410	18.7	22.2	20.5	28	27
PS 0010836	1510	2690	2100	20.6	23.7	22.2	22	21
PS 01102958	1020	2780	1900	19.3	23.0	21.2	24	23
Average	1590	2750	2170	19.2	23.1	21.1	28	22
LSD (0.10)	209	172	135	0.8	0.7	0.5	3	3
CV (%)	12	6	-	3.9	2.6	-	-	-

Table 10. Seed yield averages for green and yellow dry pea varieties tested for three years in northern Idaho. Data from Stephen Guy, University of Idaho.

Variety / Selection	2004	2005	2006	Average
	-----lb/acre-----			
Green pea				
Ariel	3360	1900	2040	2250
Bluebird	3310	2030	2120	2320
Camry	3060	1985	1940	2180
Columbian	3320	1610	1710	1990
Cooper	3900	1875	1550	2150
Cruiser	3060	1790	2020	2130
Karita	3440	1875	2210	2320
K2	3440	1940	2060	2290
Monarch	3290	2245	1970	2340
Pacifica	3250	1945	2230	2320
Stirling	3430	2050	2180	2380
Stratus	3670	2130	2110	2430
Toledo	2650	1850	1960	2060
Average	3320	1940	2010	2240
LSD (0.10)	347	90	135	--
Yellow pea				
Carousel	3810	1900	2120	2370
Delta	3490	2100	2240	2430
Rex	3670	2100	2280	2480
Shawnee	3120	1720	2130	2160
Swing	3140	2120	2130	2330
Topeka	3970	2220	2250	2580
PS 0010836	3120	2100	2100	2300
Average	3480	2040	2180	2380
LSD (0.10)	347	90	135	--

Table 11. No-till dry pea variety performance results at Genesee, ID - 2006.
Data from Stephen Guy, University of Idaho.

Variety	Seed Yield lb/acre	Seed Weight g/100	Vine Length inches	Canopy Height inches	Erect Index* 0.0-1.0
Aragorn	1080	20.9	31	25	0.8
Bluebird	1190	20.5	24	10	0.4
Camry	820	22.1	25	14	0.6
Columbian	1400	17.6	41	6	0.1
Cooper	490	24.5	30	23	0.8
Cruiser	1120	19.3	32	17	0.5
Joel	1480	19.9	42	8	0.2
Karita	990	24.1	28	23	0.9
K2	1230	20.8	30	27	0.9
Monarch	1330	17.2	28	9	0.3
Pacifica	1170	20.5	36	14	0.4
Stirling	1250	18.6	27	12	0.4
Stratus	980	22.0	25	12	0.5
Toledo	990	21.8	30	22	0.7
Pro 031-7053	1330	18.1	32	16	0.5
Carousel	1030	23.5	31	21	0.7
Rex	1200	21.2	34	7	0.2
Shawnee	1370	19.1	49	8	0.2
Topeka	1440	19.8	27	7	0.3
Universal	1530	21.2	31	17	0.5
Average	1170	20.6	32	15	0.5
LSD (0.10)	188	1.2	4	6	0.2
CV (%)	14	4.8	11	35	37.5

* means canopy height/vine length; 1.0=upright

Table 12. No-till dry pea variety performance results at Moscow, ID - 2006.
Data from Stephen Guy, University of Idaho.

Variety / Selection	Seed Yield lb/acre	Seed Weight g/100	Vine Length inches	Canopy Height inches	Erect Index*
Aragorn	2350	19.4	30	30	1.0
Bluebird	1950	20.7	23	23	1.0
Camry	1960	20.9	19	19	1.0
Columbian	1920	18.4	36	11	0.3
Cooper	1910	23.9	27	27	1.0
Cruiser	1820	17.7	30	30	1.0
Joel	1890	20.2	47	14	0.3
Karita	1950	23.3	26	26	1.0
K2	1760	18.8	25	25	1.0
Monarch	2250	18.7	26	24	0.9
Pacifica	1950	19.3	28	27	1.0
Stirling	1810	18.6	24	21	0.9
Stratus	2000	21.4	21	20	1.0
Toledo	1730	21.6	29	29	1.0
Pro 031-7053	1850	18.6	29	29	1.0
Carousel	1940	21.3	31	30	1.0
Rex	1980	22.2	28	17	0.6
Shawnee	1830	20.1	38	11	0.3
Topeka	2030	21.0	25	25	1.0
Universal	2030	19.9	29	29	1.0
Average	1940	20.3	28	23	0.9
LSD (0.10)	143	0.8	3	4	0.1
CV (%)	6	3.5	9	13	9.8

* means canopy height/vine length; 1.0=upright

Table 13. Combined no-till dry pea variety performance data for Genesee and Moscow, 2006.
Data from Stephen Guy, University of Idaho

Variety or Selection	Seed Yield			Seed Weight			Average of 2 Sites		
	Genesee	Moscow	Average	Genesee	Moscow	Average	Vine Length	Canopy Height	Erect Index*
	-----lb/acre-----			-----g/100-----			inches	inches	0.0-1.0
Aragorn	1080	2350	1720	20.9	19.4	20.2	30	28	0.9
Bluebird	1190	1950	1570	20.5	20.7	20.6	24	17	0.7
Camry	820	1960	1390	22.1	20.9	21.5	22	17	0.8
Columbian	1400	1920	1660	17.6	18.4	18.0	39	9	0.2
Cooper	490	1910	1200	24.5	23.9	24.2	29	25	0.9
Cruiser	1120	1820	1470	19.3	17.7	18.5	31	24	0.8
Joel	1480	1890	1690	19.9	20.2	20.1	45	11	0.3
Karita	990	1950	1470	24.1	23.3	23.7	27	25	1.0
K2	1230	1760	1500	20.8	18.8	19.8	28	26	1.0
Monarch	1330	2250	1790	17.2	18.7	18.0	27	17	0.6
Pacifica	1170	1950	1560	20.5	19.3	19.9	32	21	0.7
Stirling	1250	1810	1530	18.6	18.6	18.6	26	17	0.6
Stratus	980	2000	1490	22.0	21.4	21.7	23	16	0.8
Toledo	990	1730	1360	21.8	21.6	21.7	30	26	0.9
Pro 031-7053	1330	1850	1590	18.1	18.6	18.4	31	23	0.8
Carousel	1030	1940	1490	23.5	21.3	22.4	31	26	0.9
Rex	1200	1980	1590	21.2	22.2	21.7	31	12	0.4
Shawnee	1370	1830	1600	19.1	20.1	19.6	44	10	0.2
Topeka	1440	2030	1740	19.8	21.0	20.4	26	16	0.7
Universal	1530	2030	1780	21.2	19.9	20.6	30	23	0.8
Average	1170	1940	1560	20.6	20.3	20.5	30	19	0.7
LSD (0.10)	188	143	117	1.2	0.8	0.8	2	4	0.1
CV (%)	14	6	-	4.8	3.5	-	-	-	-

* means canopy height/vine length; 1.0=upright

Table 14. Seed yield and seed weight for no-till dry pea varieties tested for three years in northern Idaho. Data from Stephen Guy, University of Idaho.

Variety or Selection	Seed Yield				Seed Weight			
	2004	2005	2006	Average	2004	2005	2006	Average
	-----lb/acre-----				-----g/100-----			
Bluebird	3270	2100	1570	2310	24.9	20.3	20.6	21.9
Columbian	2910	1560	1660	2040	18.4	18.7	18.0	18.4
Cruiser	2950	2000	1470	2140	20.5	17.9	18.5	19.0
Joel	3060	1780	1690	2180	23.0	19.7	20.1	20.9
Karita	2920	2150	1470	2180	25.5	22.8	23.7	24.0
K2	2970	1990	1500	2150	20.7	18.5	19.8	19.7
Monarch	3410	2230	1790	2480	20.4	18.6	18.0	19.0
Stirling	3430	2030	1530	2330	20.4	18.9	18.6	19.3
Stratus	3430	2350	1490	2420	23.6	21.4	21.7	22.2
Toledo	3010	2000	1360	2120	24.8	22.2	21.7	22.9
Rex	3410	1900	1590	2300	23.2	21.6	21.7	22.2
Shawnee	2820	1720	1600	2050	22.5	19.8	19.6	20.6
Topeka	3320	2310	1740	2460	22.6	21.0	20.4	21.3
Average	3147	2009	1570	2240	22.3	20.1	20.5	21.0
LSD (0.10)	120	160	117	-	0.9	0.5	0.8	-

Table 15. Western Regional Dry Pea Yield Trial at Kalispell, MT - 2006.
Data from Duane Johnson and Louise Strang.

Cultivar	Stand #/sqft	Bloom date	Nodes to 1st flw	Height in	Yield lbs/a	Seeds #/lb
PS0110745	14.0	6/14	12	27.0	2935	1949
PS0110767	15.2	6/14	12	34.0	3451	1809
PS0110805	13.2	6/18	10	38.3	3074	2020
PS02100026	13.6	6/16	10	31.0	2944	1769
PS02100128	13.3	6/16	12	35.3	3186	2394
Stirling	14.7	6/9	10	26.7	2740	2036
PS0010836	13.1	6/17	12	27.0	2949	1693
PS01102958	14.4	6/18	11	29.0	3038	1770
PS02101119	13.0	6/15	11	28.7	3429	1531
PS02101137	14.9	6/17	12	35.3	3905	1758
PS02101229	15.0	6/19	11	31.3	3485	1842
mean	14.0		11	31.2	3194	1870
LSD(0.05)	NS		NS	5.0	NS	131
Pr>F	0.5545		0.1902	0.0005	0.1562	< 0.0001
CV(%mean)	10.9		11.4	9.5	14.3	4.1

Table 16. Western Regional Dry Pea Trial - Dry-land dry pea agronomic summary. Exp. 810706 Central Ag Research Center, Moccasin, MT - 2006. Data from Chengci Chen and Karnes Neill.

Selection	Flowering % @ 6/15/06	Canopy Height cm	Grain Harvest			
			Yield lbs/ac	Seed Wt g/1,000	Test Wt lbs/bu	Moisture %
Majoret (Check)	55.0	57.3 ^a	2,036 ^a	213.0	63.9 ^a	10.7
PS0110745	90.0 ^a	43.3	1,622	185.7	62.5	10.5
PS0110767	80.0	45.5	1,884	200.9	63.3	11.0 ^a
PS0110805	82.5 ^a	55.3 ^a	1,695	187.7	62.7	10.6
PS02100026	87.5 ^a	41.8	1,852	198.9	62.5	10.4
PS02100128	76.3	56.8 ^a	1,959	169.0	62.6	10.5
Stirling	90.0 ^a	42.3	2,001	179.3	62.5	10.6
PS0010836	31.3	45.8	2,032 ^a	232.4 ^a	63.7 ^a	11.2 ^a
PS01102958	28.8	45.0	1,813	228.5	64.2 ^a	10.7
PS02101119	85.0 ^a	45.8	2,036 ^a	236.1 ^a	63.5	11.0 ^a
PS02101137	78.8	47.8	2,037 ^a	207.2	62.7	11.0 ^a
PS02101229	47.5	46.3	2,227 ^a	210.0	63.6	11.0 ^a
Mean (n = 64)	69.4	47.7	1,933	204.1	63.1	10.8
LSD (0.05 by t)	8.2	6.5	212	5.7	0.5	0.4
CV% (s/means)	8.19	9.41	7.61	1.9	0.57	2.32
F-Value (15,45 df)	63.49	6.07	5.23	116.0	12.72	4.35
P-Value (by F)	0.0000	0.0000	0.0001	0.0000	0.0000	0.0005
MSE (33 df)	32.260	20.164	21607	15.8	0.1275	0.062279

^a - Denotes entries equal to (based on LSD0.05) the entry with highest value (in bold).

Table 17. Nebraska Western Regional Yield Trial - 2006.
 Data from Carlos Urrea and Glen Frickel, University of Nebraska.

Variety	Sydney Irrigated	
	YIELD Lbs/Acre	Seed Weight (milligrams)
PS02101229	2750	213
CRUISER	2470	200
PS02101119	2430	247
Marquee	2380	174
PS02100128	2290	180
PS02100026	2260	238
K2	2140	208
PS0110805	2070	201
PS01102958	1900	221
ADMIRAL	1800	212
Stirling	1790	193
PS0010836	1760	242
PS0110745	1700	187
PS0110767	1650	205
PS02101137	1320	222
Average	2049	209
LSD 0.05	326	11
C.V.	11	3

Table 18. Western Regional Field Pea Nursery – NDSU Carrington Research Extension Center - 2006.
 Data from Blaine Schatz and Steve Zwinger, North Dakota State University.

Variety	Days to Bloom	Bloom Duration	Days to PM	Vine Length cm	Canopy Ht at Harvest cm	Height Index %	Lodging at PM 0-9	Harvest Ease 0-9	Seed Protein %	Seeds/ Pound	1000 KWT gms	Test Weight lbs/bu	Seed Yield bu/ac
PS02101229	54.7	15.3	82.7	59	21	36	6.3	7.3	...	2010	226	63.2	55.5
PS02101119	52.0	18.0	80.3	53	22	42	6.0	7.3	...	1633	278	62.8	54.5
PS0010836	52.7	17.3	82.3	52	27	53	5.0	6.7	...	1655	275	63.0	54.1
PS02101137	54.0	15.3	81.7	64	28	44	5.3	6.3	...	1781	255	63.3	53.7
DS Admiral	53.0	17.0	79.3	69	48	70	1.3	3.0	...	1780	255	64.2	52.8
PS01102958	54.3	15.7	83.3	63	20	32	6.0	7.3	...	1825	249	63.5	52.0
Stirling	48.0	21.0	84.3	52	20	41	7.0	8.3	...	2292	198	62.9	50.9
PS0110767	50.3	18.3	79.0	53	23	44	5.3	7.0	...	1980	230	63.4	50.0
PS0110745	49.0	18.0	77.3	45	28	65	4.0	6.0	...	2170	209	62.5	45.3
Majoret	54.7	14.7	83.3	61	27	45	4.7	5.3	...	2225	204	63.8	45.0
PS02100128	52.7	16.7	78.3	65	31	47	3.3	4.7	...	2437	186	63.3	44.1
PS0110805	54.0	15.3	83.3	67	25	38	5.7	6.0	...	2295	198	63.5	42.7
Medora	56.3	14.0	84.0	67	31	47	4.3	5.0	...	2079	218	62.6	40.9
PS02100026	51.0	18.0	80.7	52	17	32	8.3	9.0	...	1960	232	63.1	40.1
MEAN	52.6	16.8	81.4	59	26	45	5.2	6.4	...	2009	230	63.2	48.7
C.V.%	0.9	4.7	1.3	8.3	16.6	20.7	16.4	10.8	...	2.9	3.0	0.7	6.0
LSD.05	0.8	1.3	1.8	8.2	7.3	15.7	1.4	1.2	...	97	11	0.8	4.9
LSD.01	1.1	1.8	2.5	11.1	9.9	21.2	1.9	1.6	...	131	15	NS	6.6
#REPS	3	3	3	3	3	3	3	3	...	3	3	3	3

Planting Date = April 26 ; Harvest Date = July 24 ; Previous Crop = Durum
 Harvest Ease scores; 0 = all plants upright ~ very easy harvest, to 9 = all plants flat ~ very difficulty to harvest direct.
 Harvest Index; Plant height at time of harvest relative to plant height at end of bloom.

Table 19. Field Pea Performance Test – NDSU Carrington Research Extension Center – 2006
 Data from Blaine Schatz and Steve Zwinger, North Dakota State University.

Variety	Days to Bloom	Bloom Duration	Days to PM	Vine Length cm	Canopy Ht at Harvest cm	Height Index %	Lodging at PM 0-9	Harvest Ease 0-9	Seed Protein %	Seeds/Pound	1000 KWT gms	Test Weight lbs/bu	Seed Yield bu/ac
Green Cotyledon Type													
61758	48.5	13.3	78.8	81	34	41	5.5	5.8	25.6	2037	223	64.6	48.8
711446	49.8	12.3	79.3	84	54	64	3.8	4.5	24.4	2046	224	64.5	45.0
93018	46.0	15.0	77.3	83	65	78	2.5	3.3	25.0	2028	224	63.8	46.8
AP-18	53.5	11.0	80.0	62	52	86	4.0	4.5	24.8	2074	219	63.6	41.7
Aragorn	48.0	13.8	78.3	67	53	79	3.5	4.3	24.5	2214	206	63.6	43.8
APCM 03821	46.3	15.3	78.0	74	49	67	5.0	5.3	23.2	1657	274	64.9	44.1
APCM 93511	53.3	9.0	80.5	72	57	79	4.0	4.5	23.2	1736	262	65.2	53.2
CDC Sage	51.5	12.8	81.0	67	66	99	3.3	3.5	25.3	2466	186	64.1	38.0
CDC Striker	52.0	9.8	79.3	79	75	96	1.0	1.0	27.0	1905	238	64.4	45.6
Camry	50.5	10.8	81.0	54	53	99	2.3	2.5	23.0	1957	232	64.4	52.0
Ceb 1093	53.8	8.5	80.8	73	73	100	0.8	1.0	23.0	1696	268	64.3	52.5
Cooper	56.0	8.8	82.8	73	62	85	2.0	2.5	24.7	1736	263	64.4	51.3
Cruiser	48.5	13.5	78.8	68	53	79	4.0	4.3	24.3	2223	204	63.7	42.0
IN 1097	45.0	16.0	79.0	74	72	96	1.5	1.8	24.4	1844	246	64.3	45.4
K2	46.5	15.5	78.5	71	69	98	2.3	2.3	24.4	2209	206	63.7	49.7
Majoret	49.5	12.5	79.8	68	63	93	3.0	3.5	25.2	2065	220	64.0	42.9
Nitouche	50.3	12.0	80.8	79	55	71	3.3	3.5	24.6	1861	244	63.5	46.7
Medora	55.0	10.8	80.5	74	68	92	2.5	3.0	23.9	2045	222	63.6	45.0
Pro 011-3172	45.8	16.3	78.0	77	58	75	4.3	4.8	22.8	2196	208	63.7	47.7
SW C 6198	50.5	12.8	81.3	85	60	71	3.3	3.8	24.2	1981	229	64.3	41.6
SW C 6232	48.3	13.0	77.8	68	57	84	3.3	3.5	24.0	2351	194	63.7	50.6
SW D 6108	48.5	12.5	79.0	77	51	66	4.5	5.3	24.5	1988	229	63.9	41.4
Stirling	46.0	16.0	80.8	58	24	42	7.3	7.5	25.5	2396	190	64.1	45.2
Tamora	55.8	7.8	83.3	71	60	84	3.3	4.0	24.3	1730	268	64.3	45.9
MEAN	49.9	12.6	78.8	74.8	59.4	79.7	3.1	3.6	24.5	1982	233	64.2	47.0
C.V.%	1.1	11.6	1.4	7.6	14.2	14.5	28.4	25.1	4.2	6.7	7.2	0.6	10.0
LSD.05	0.8	2.0	1.6	7.9	11.7	16.0	1.2	1.3	1.4	185	23	0.6	6.5
LSD.01	1.0	2.7	2.1	11.0	15.4	21.0	1.6	1.7	1.9	244	31	0.7	8.6
#REPS	4	4	4	4	4	4	4	4	4	4	4	4	4

Table 19. Field Pea Performance Test – NDSU Carrington Research Extension Center – 2006
 Data from Blaine Schatz and Steve Zwinger, North Dakota State University.

Variety	Days to Bloom	Bloom Duration	Days to PM	Vine Length cm	Canopy Ht at Harvest cm	Height Index %	Lodging at PM 0-9	Harvest Ease 0-9	Seed Protein %	Seeds/Pound	1000 KWT gms	Test Weight lbs/bu	Seed Yield bu/ac
Yellow Cotyledon Type													
86010	47.0	14.5	76.0	88	81	92	1.5	2.5	25.9	1654	275	65.1	50.2
97113	46.8	13.3	73.0	75	50	67	3.5	5.0	23.6	1853	246	63.1	48.6
APCM 711452	46.5	14.5	76.0	88	51	57	4.0	5.0	25.2	1976	231	64.5	47.6
APCM 714202	57.5	7.8	81.8	88	83	95	0.3	0.5	25.5	1786	255	64.5	42.0
APCM 714204	58.8	6.0	82.8	80	80	100	0.8	1.0	25.2	1804	252	64.4	35.8
APCM 8302	50.5	11.5	79.0	87	79	90	2.0	2.5	23.5	1655	275	64.9	35.4
APCM 97107	46.0	14.0	74.8	77	37	48	5.3	6.0	23.3	1782	255	62.8	49.9
CDC Bronco	53.0	11.0	79.3	55	55	100	3.5	3.5	26.7	2258	201	64.4	40.9
CDC Golden	49.3	14.0	77.0	81	69	86	2.3	2.5	24.8	2138	213	64.6	55.0
CDC Mozart	49.3	14.5	79.5	64	37	59	5.0	5.3	24.1	2144	212	64.8	55.2
CDC Sonata	54.8	13.8	82.5	73	32	43	7.8	7.8	25.9	1947	234	64.0	38.0
Carneval	49.5	13.8	78.8	78	74	94	2.5	2.5	23.7	2131	214	63.7	50.9
Ceb 4148	51.5	12.3	78.3	74	37	50	5.3	6.3	24.2	2462	185	64.0	49.0
Ceb 4149	52.5	11.3	81.0	72	62	85	3.0	3.3	24.4	1939	237	64.0	46.2
Ceb 4152	46.0	15.8	78.0	78	76	98	0.5	0.8	24.5	1701	267	65.1	48.6
Ceb 4159	50.8	11.5	79.0	81	75	93	2.0	2.0	26.0	1855	245	65.1	48.7
Ceb 4160	49.5	12.5	77.5	82	79	96	1.0	1.3	25.2	1805	253	65.6	42.6
Ceb 4163	50.0	14.3	80.0	75	48	64	4.5	4.8	25.2	1942	234	64.4	53.0
DS Admiral	48.9	12.8	78.1	83	75	90	1.9	2.3	24.1	1961	232	64.5	52.0
Eclipse	48.3	14.8	78.5	72	65	91	2.5	3.0	25.1	1932	235	65.0	55.4
Fusion	47.3	14.5	79.3	77	47	61	4.3	5.0	23.7	1956	232	64.4	50.6
Lasso	47.5	14.5	79.0	85	43	51	4.5	5.0	24.9	1884	241	63.7	48.3
Miami	52.3	10.0	79.0	75	71	95	2.0	2.3	24.2	2051	222	64.7	53.5
PS01102958	52.0	12.0	80.8	68	32	48	6.0	6.8	24.5	1808	251	64.4	46.3
MEAN	49.9	12.6	78.8	74.8	59.4	79.7	3.1	3.6	24.5	1982	233	64.2	47.0
C.V.%	1.1	11.6	1.4	7.6	14.2	14.5	28.4	25.1	4.2	6.7	7.2	0.6	10.0
LSD.05	0.8	2.0	1.6	7.9	11.7	16.0	1.2	1.3	1.4	185	23	0.6	6.5
LSD.01	1.0	2.7	2.1	11.0	15.4	21.0	1.6	1.7	1.9	244	31	0.7	8.6
#REPS	4	4	4	4	4	4	4	4	4	4	4	4	4

Table 19. Field Pea Performance Test – NDSU Carrington Research Extension Center – 2006
 Data from Blaine Schatz and Steve Zwinger, North Dakota State University.

Variety	Days to Bloom	Bloom Duration	Days to PM	Vine Length cm	Canopy Ht at Harvest cm	Height Index %	Lodging at PM 0-9	Harvest Ease 0-9	Seed Protein %	Seeds/Pound	1000 KWT gms	Test Weight lbs/bu	Seed Yield bu/ac
Yellow Cotyledon Type													
Polstead	49.0	15.3	80.3	63	58	93	2.8	3.5	24.2	1805	252	64.6	52.5
SW C 5116	51.8	10.8	78.3	77	63	82	3.0	3.8	22.3	2009	226	63.2	50.7
SW Cabot	48.0	14.8	78.5	62	62	100	1.8	2.5	24.7	1947	233	63.9	43.0
SW Capri	49.3	12.0	75.3	76	75	99	0.8	1.3	24.6	2225	205	63.9	54.3
SW Circus	47.5	14.5	74.5	74	69	93	1.5	2.3	23.4	2112	215	64.2	51.5
SW D 5021	49.0	13.3	77.5	79	61	78	3.8	4.5	24.9	1947	234	64.2	44.9
SW D 5211	50.5	10.8	76.3	71	70	99	1.8	2.3	25.4	2279	200	63.2	42.8
SW D 5212	50.0	11.3	78.0	82	81	99	1.3	1.5	24.5	2061	220	64.9	52.0
SW E 5109	48.8	12.8	75.8	73	33	46	5.5	6.5	25.2	2049	222	64.0	46.2
SW E 5170	50.8	11.0	77.3	76	55	73	3.5	4.5	23.7	2043	222	64.7	45.8
SW E 5174	53.0	10.0	78.5	73	61	83	3.3	4.3	25.5	2287	199	64.6	45.1
SW Marquee	49.8	14.3	77.0	75	75	99	0.8	1.0	25.1	2272	200	63.7	46.4
SW Midas	49.0	12.5	76.3	71	61	86	2.0	3.0	23.9	2236	203	64.6	51.2
SW Salute	48.8	14.8	77.8	72	46	65	4.5	5.5	25.6	1988	228	63.9	47.0
Tudor	51.3	10.5	76.8	74	71	96	2.0	3.0	24.0	1695	268	64.5	45.2
Misc. Type													
<i>Marrowfat</i>													
Orka	48.0	12.8	81.8	72	44	62	5.3	6.0	23.6	1319	347	63.3	38.1
Mumm	48.3	13.0	80.3	73	39	52	6.0	6.5	24.8	2123	232	63.3	41.0
UK2	50.5	11.3	81.0	91	59	65	3.5	3.8	24.6	1515	306	63.2	45.3
MEAN	49.9	12.6	78.8	74.8	59.4	79.7	3.1	3.6	24.5	1982	233	64.2	47.0
C.V.%	1.1	11.6	1.4	7.6	14.2	14.5	28.4	25.1	4.2	6.7	7.2	0.6	10.0
LSD.05	0.8	2.0	1.6	7.9	11.7	16.0	1.2	1.3	1.4	185	23	0.6	6.5
LSD.01	1.0	2.7	2.1	11.0	15.4	21.0	1.6	1.7	1.9	244	31	0.7	8.6
#REPS	4	4	4	4	4	4	4	4	4	4	4	4	4

Planting Date = May 5 ; Harvest Date = July 28 & 31 ; Previous Crop = Spring Wheat

Harvest Ease scores; 0 = all plants upright ~ very easy harvest, to 9 = all plants flat ~ very difficult to harvest direct.

Harvest Index; Plant height at time of harvest relative to plant height at end of bloom.

Table 20. Field Pea: Preliminary Yield Trial NDSU Carrington Research Extension Center - 2006.
Data from Blaine Schatz and Steve Zwinger, North Dakota State University.

Variety	Days to Bloom	Bloom Duration	Days to PM	Vine Length cm	Canopy Ht at Harvest cm	Height Index %	Lodging at PM 0-9	Harvest Ease 0-9	Seed Protein %	Seeds/ Pound	1000 KWT gms	Test Weight lbs/bu	Seed Yield bu/ac
PS03100411	53	17	84	72	20	28	6	7	...	1917	237	63.0	62.9
PS03101822	51	19	79	52	22	42	6	8	...	1954	232	62.6	61.9
PS04100696	54	14	84	50	18	36	7	8	...	1796	253	64.4	60.0
STIRLING	48	23	87	64	18	28	7	8	...	2194	207	63.4	58.8
PS03100280	50	20	77	60	28	47	4	7	...	2037	223	62.7	58.4
PS04100698	53	15	83	38	20	53	6	8	...	1921	236	63.8	58.4
PS03100471	51	17	81	56	24	43	5	7	...	1802	252	62.6	58.1
PS04100699	52	16	81	62	14	23	7	8	...	1901	239	62.4	57.9
PS03690197	52	18	83	52	32	62	4	6	...	1973	230	62.7	57.8
PS03101340	47	20	80	62	26	42	6	7	...	1665	273	62.6	56.8
PS03100278	48	22	79	64	38	59	3	6	...	1945	233	63.5	56.7
PS03100546	50	20	82	52	24	46	6	7	...	1788	254	62.1	56.7
PS03101815	51	19	83	66	20	30	6	8	...	1712	265	62.4	55.9
PS03101459	52	18	84	62	32	52	5	7	...	2015	225	64.5	55.6
PS03690011	52	18	84	64	18	28	6	8	...	2102	216	62.7	54.5
PS03101445	52	18	83	68	22	32	6	8	...	1963	231	63.4	53.9
MEDORA	57	16	86	81	44	54	4	5	...	1986	229	62.9	53.5
PS03101349	49	21	82	58	26	45	6	8	...	1868	243	63.6	53.0
PS04100956	55	12	85	58	21	36	6	7	...	1893	240	64.2	52.9
PS01102958	56	14	85	66	24	36	6	8	...	1749	260	62.9	52.2
PS04100204	51	19	82	74	18	24	6	8	...	2412	188	62.9	51.8
PS03101347	51	17	84	66	26	39	6	7	...	1980	229	63.7	51.5
PS04100543	53	17	84	50	18	36	6	8	...	2000	227	64.1	51.5
PS04100722	54	16	81	64	32	50	3	5	...	1826	249	63.3	51.1
PS04100946	49	18	79	48	18	38	7	9	...	2119	214	63.0	50.7
PS03690293	50	20	79	58	30	52	5	7	...	2033	223	62.1	49.8
PS03101867	54	16	81	58	20	35	6	8	...	2240	203	63.9	49.6
DS Admiral	52	18	77	64	28	44	1	3	...	1861	244	65.0	49.4
PS04100453	54	15	84	76	26	34	5	5	...	2083	218	64.8	48.4
PS04100014	51	16	80	72	28	39	5	6	...	1981	229	62.6	48.0
Eclipse	54	16	83	58	26	45	4	5	...	1905	238	65.2	47.6
PS02101224	47	21	83	60	18	30	7	8	...	1756	259	64.3	47.3
PS04100591	55	15	84	68	30	44	4	6	...	2022	225	63.3	47.3

Table 20. Field Pea: Preliminary Yield Trial NDSU Carrington Research Extension Center - 2006.
Data from Blaine Schatz and Steve Zwinger, North Dakota State University.

Variety	Days to Bloom	Bloom Duration	Days to PM	Vine Length cm	Canopy Ht at Harvest cm	Height Index %	Lodging at PM 0-9	Harvest Ease 0-9	Seed Protein %	Seeds/Pound	1000 KWT qms	Test Weight lbs/bu	Seed Yield bu/ac
PS04100741	52	18	76	50	24	48	4	6	...	2028	224	61.8	47.3
PS04100473	55	15	84	50	16	32	7	9	...	2184	208	63.6	47.2
PS04100890	54	16	81	42	16	38	6	7	...	1784	255	64.5	46.7
PS04100642	55	15	84	76	30	40	4	5	...	2000	227	62.4	46.2
Majoret	54	16	83	52	30	58	4	5	...	2186	208	64.3	45.9
PS04100732	53	17	78	48	16	33	6	8	...	1975	230	64.2	45.0
PS04100783	55	15	79	52	20	39	6	7	...	2315	196	63.3	44.7
Cruiser	51	19	81	62	42	68	3	5	...	2141	212	63.1	44.4
PS04100656	48	20	77	64	20	31	6	8	...	2112	215	62.8	43.6
PS03100116	56	14	83	42	22	52	7	8	...	2216	205	64.7	39.8
PS04100626	56	14	84	78	28	36	4	6	...	2106	216	62.8	38.9
PS04100546	55	15	84	58	24	41	6	7	...	1956	232	62.4	37.6
PS03101847	52	18	85	62	16	26	7	8	...	1738	261	62.3	34.9
PS04100450	54	14	87	68	22	32	6	6	...	1647	276	63.2	34.0
PS04100282	48	19	81	68	18	27	7	8	...	1764	257	62.5	32.8
MEAN	52.2	17.2	82.1	60.3	24	40.2	5.4	7	...	1970	232	63.3	50.2

Planting Date = April 26 ; Harvest Date = July 24 ; Previous Crop = Durum
Harvest Ease scores; 0 = all plants upright ~ very easy harvest, to 9 = all plants flat ~ very difficulty to harvest direct.
Harvest Index; Plant height at time of harvest relative to plant height at end of bloom.

Table 21. Field Pea: Preliminary Yield Trial at Hettinger, North Dakota - 2006.
Data from Eric Eriksmoen, North Dakota State University.

Variety	Days to Bloom	Bloom Duration	Days to PM	Canopy Ht at Harvest cm	Lodging at PM 0-9	1000 KWT qms	Test Weight lbs/bu	Seed Yield bu/ac
Stirling	58	12	87	44	2	185.6	60.6	18.3
Medora	64	6	89	38	1	173.6	61.2	19.4
PS01102958	62	8	85	41	2	220.0	62.4	20.6
PS02101224	58	11	83	42	2	229.6	62.8	16.7
PS03100116	63	7	90	50	2	216.0	62.6	20.0
PS03100471	59	11	85	47	1	214.4	60.1	23.9
PS03100546	60	9	85	45	2	137.6	59.1	25.6
PS03101340	59	11	87	49	3	235.2	60.6	18.3
PS03101347	60	10	90	53	2	211.2	60.8	21.7
PS03101349	58	11	82	51	2	177.6	58.3	25.0
PS03101445	61	10	85	37	2	199.2	62.2	26.1
PS03101459	58	13	85	50	2	184.8	62.7	27.8
PS03690011	61	8	84	38	2	177.6	60.6	18.3
PS03690197	59	10	84	34	3	187.2	58.9	21.7
PS03690293	59	11	83	37	1	166.4	61.2	15.6
PS03100278	58	11	82	45	1	208.8	63.8	24.4
PS03100280	58	6	81	40	1	142.4	59.6	20.0
PS03100411	58	8	82	37	2	150.4	59.6	20.0
PS03101815	58	8	82	39	2	198.4	61.2	15.0
PS03101822	58	10	81	34	2	208.8	63.0	19.4
PS03101847	59	9	84	38	2	208.8	60.8	18.3
PS03101867	62	7	83	39	4	157.6	67.6	14.4
PS04100204	60	9	83	42	3	125.6	58.0	21.7
PS04100282	59	7	87	44	3	225.6	61.4	15.0
PS04100450	62	6	90	54	3	261.6	31.3	17.2
PS04100453	62	6	85	59	1	184.0	60.4	26.1
PS04100473	62	7	84	32	2	185.6	62.0	32.2
PS04100543	62	6	83	30	2	156.0	58.0	22.8
PS04100546	62	6	85	38	3	215.2	60.8	13.9
PS04100591	62	7	85	48	2	168.8	61.2	21.7
PS04100626	62	6	86	45	1	184.8	60.4	20.0
PS04100642	62	7	84	42	2	172.0	57.7	25.0
PS04100656	59	7	83	33	3	200.8	61.4	17.8
PS04100946	59	7	81	29	2	195.2	61.2	23.3
PS04100956	62	6	84	44	4	187.2	61.0	14.4
PS04100014	62	8	83	48	6	180.8	61.0	15.0
PS04100696	63	7	87	40	2	183.2	59.6	22.2
PS04100698	63	7	85	30	2	207.2	62.9	25.0
PS04100699	59	10	83	37	3	184.8	56.9	23.3
PS04100722	63	7	82	54	2	219.2	30.4	19.4
PS04100732	63	8	84	27	1	185.6	59.9	33.3
PS04100741	62	6	83	40	3	165.6	60.1	25.0
PS04100783	63	8	84	34	2	.	.	.
PS04100890	64	6	87	47	2	210.4	59.7	21.7
DS Admiral	62	8	83	38	1	175.2	62.5	32.8
Eclipse	63	8	85	49	1	199.2	60.4	29.4
Majoret	63	5	83	34	1	158.4	61.9	27.8
Cruiser	62	4	83	42	2	158.4	61.7	26.7

*lodging 0 - 9: 0 = none, 9 = lying flat on ground.

Planting date: April 11, 2006

Harvest Date: July 14, 2006

Previous Crop = durum

Table 22. Western Regional Dry Pea Yield Trial (0697), Continuously cropped, No-Till at Hettinger, North Dakota – 2006. Data from Eric Eriksmoen, North Dakota State University.

Variety	Days to Bloom	Duration of Bloom days	Days to Mature	Plant Height cm	Lodg. 0-9*	1000 Seed wt. grams	Test Weight Lbs/bu	Seed Yield Bu/Ac
DS Admiral	61	7	83	46	1.3	169	59.6	27.2
PS0110745	58	10	84	37	3.0	173	60.3	18.7
PS0110767	58	10	84	43	1.7	160	61.3	21.3
PS0110805	62	8	84	39	1.3	172	60.2	24.1
PS02100026	59	8	83	39	2.0	191	60.7	18.7
PS02100128	62	8	85	40	2.0	163	60.3	23.3
Stirling	59	9	84	36	1.7	170	61.4	21.1
PS0010836	62	8	84	48	3.3	196	60.3	23.7
PS01102958	62	7	85	40	2.3	152	61.6	26.9
PS02101119	61	8	83	42	1.3	189	61.7	24.6
PS02101137	59	9	83	41	1.7	194	60.8	22.4
PS02101229	61	7	83	37	2.0	181	59.4	23.9
Trial Mean	60	8	84	41	2.0	176	60.6	23.0
C.V. %	2.2	18.9	1.2	8.3	30.1	5.8	1.5	8.8
LSD .05	2	NS	NS	6	1.0	17	NS	3.4
LSD .01	3	NS	NS	8	1.4	23	NS	4.6

* Lodging: 0 = none, 9 = lying flat on ground.

Planting Date: April 11, 2006

Harvest Date: July 14, 2006

Previous Crop: durum

Table 23. North Central Research Extension Center – Minot, ND – Dry Pea Advanced Line Variety Trial – 0606, McPhee - 2006.
Data from Mark Halvorson.

Variety	Days	Vine	Canopy		Seed	Test	Protein	Seed Yield				
	to 10% Bloom		Length	Harvest				Ht	Weight	Weight	2004	2005
	DAP	in	Ht	Index	g/1000	lb/bu	%	-----	---bu/A---	-----	Year	Year
Stirling	71	13	12	91	204.6	64.1	22.1	68.4	31.9	28.0	30.0	42.8
Medora	77	24	19	80	221.6	62.8	22.1	--	--	36.8	--	--
PS01102958	75	16	13	80	232.1	63.7	21.8	67.2	28.8	33.1	31.0	43.0
PS02101224	70	22	12	53	241.0	63.6	24.3	--	28.2	28.3	28.3	--
PS03100116	77	17	16	95	216.5	64.6	22.8	--	--	36.3	--	--
PS03100471	72	16	18	113	245.5	62.7	24.7	--	--	33.1	--	--
PS03100546	74	16	17	105	242.6	63.3	21.2	--	--	37.4	--	--
PS03101340	70	20	17	84	256.5	62.2	20.9	--	--	35.1	--	--
PS03101347	72	22	17	78	223.0	63.5	21.3	--	--	32.8	--	--
PS03101349	70	22	17	76	220.7	62.8	21.7	--	--	34.1	--	--
PS03101445	73	22	20	91	199.3	64.9	20.0	--	--	40.7	--	--
PS03101459	73	18	17	93	192.6	64.3	24.0	--	--	33.6	--	--
PS03690011	73	18	20	111	190.9	63.4	22.2	--	--	37.1	--	--
PS03690197	73	22	19	87	213.5	63.0	22.4	--	--	39.3	--	--
PS03690293	72	16	14	88	216.6	63.6	22.4	--	--	37.1	--	--
PS03100278	72	22	18	84	246.5	64.5	21.2	--	--	34.7	--	--
PS03100280	73	24	16	68	235.9	64.8	23.3	--	--	37.3	--	--
PS03100411	75	20	14	70	229.3	63.3	23.0	--	--	33.1	--	--
PS03101815	72	16	14	88	244.5	62.7	25.0	--	--	32.6	--	--
PS03101822	72	15	13	89	236.4	63.7	21.8	--	--	37.3	--	--
PS03101847	73	20	14	72	257.7	62.2	21.0	--	--	29.3	--	--
PS03101867	75	16	14	88	200.0	64.3	21.7	--	--	39.5	--	--
PS04100204	71	20	13	66	200.3	63.6	23.6	--	--	36.8	--	--
PS04100282	71	18	10	58	271.6	62.8	22.9	--	--	35.7	--	--
PS04100450	76	22	22	104	294.3	65.0	24.1	--	--	34.6	--	--
PS04100453	76	30	20	67	240.7	64.7	23.9	--	--	41.7	--	--
PS04100473	76	18	12	67	213.2	63.4	23.6	--	--	39.5	--	--
PS04100543	75	20	11	54	234.2	64.1	24.8	--	--	45.1	--	--
PS04100546	77	20	14	70	250.2	61.8	25.3	--	--	27.6	--	--
PS04100591	77	22	24	109	261.0	63.1	21.9	--	--	45.7	--	--
PS04100626	77	28	26	96	229.5	63.0	22.1	--	--	30.8	--	--
PS04100642	77	24	24	100	252.7	62.6	23.0	--	--	50.4	--	--
PS04100656	70	28	20	71	205.9	63.9	24.6	--	--	40.0	--	--
PS04100946	72	24	13	52	209.1	64.1	21.5	--	--	40.4	--	--
PS04100956	77	22	16	73	248.3	64.3	24.2	--	--	49.0	--	--
PS04100014	72	30	16	53	225.3	63.8	23.8	--	--	40.7	--	--
PS04100696	77	27	2	6	274.5	65.4	22.0	--	--	20.3	--	--
PS04100698	76	16	18	113	252.4	65.3	24.8	--	--	53.0	--	--
PS004100699	75	14	16	114	247.8	63.8	26.7	--	--	49.7	--	--
PS04100722	77	24	17	70	262.4	62.4	24.7	--	--	49.1	--	--
PS04100732	75	18	21	116	231.4	63.4	23.0	--	--	24.3	--	--
PS04100741	72	24	22	92	249.9	63.7	24.7	--	--	46.1	--	--
PS04100783	76	18	16	89	210.2	62.3	25.9	--	--	40.5	--	--

Table23. North Central Research Extension Center – Minot, ND – Dry Pea Advanced Line Variety Trial – 0606, McPhee - 2006.
 Data from Mark Halvorson.

Variety	Days	Vine	Canopy	Ht	Seed	Test	Protein	Seed Yield				
	to 10%		Harvest					Index	Weight	Weight	2004	2005
	Bloom	Length	Ht	%	g/1000	lb/bu	%	-----	---bu/A---	-----	Year	Year
	DAP	in	in	%	g/1000	lb/bu	%	-----	---bu/A---	-----	Year	Year
PS04100890	75	16	14	88	268.7	--	24.6	--	--	12.0	--	--
DS Admiral	73	26	26	102	242.6	64.1	26.3	--	--	46.0	--	--
Eclipse	76	20	20	98	252.6	63.9	26.7	--	--	48.1	--	--
Majoret	77	20	20	100	233.3	63.1	26.4	--	--	41.8	--	--
Cruiser	73	24	22	92	217.6	62.9	23.0	--	--	32.7	--	--
Mean	74	20	17	83	234.3	63.6	23.3	--	--	37.3	--	--

DAP = Days after planting

The dry pea 0606 trial on was planted at Minot in field 33-c with a Williams loam soil type on May 15, 2006. Statistical analysis of the yield data was generated using a randomized complete block design (RCBD). The trial consisted of 15 treatments and 4 replicates per treatment. Control varieties included Stirling, Medora. There was no seed treatment used and planted at a seeding rate of 300,000 PLS/A, seed inoculation at seeding. Plot size was 3.5' X 22' and end trimmed to 3.5' X16' prior to harvest with a row spacing of 6 inches. Macronutrient levels for nitrogen were 7 lb/A at 0-6 inches and 15 lb/A at 6-24 inches. Phosphorus results were 20 ppm at 0-6 inches and potassium was 480 ppm at 0-6 inches. Micronutrient levels for sulfur showed 8 lb/A at 0-6 inches and 51 lb/A at 6-24 inches and iron was 65 ppm at 0-6 inches. Prior to planting, 48 lb N as urea (46-0-0) was broadcast, no fertilizer was applied in-row to produce a yield goal of 2500 lb per acre. Soil characteristic levels for pH was 5.9 and organic matter was 2.5 percent. The electroconductivity at 0-6 inches was 0.17 mmhos/cm and at 6-24 inches was 0.33 mmhos/cm. Weed control consisted of Prowl (3 pt/A), Assure II, Basagram (1pt/A) & Raptor (1oz/A) for broadleaf and grass. No insect control treatments were applied to the trial. This trial was harvested on August 10, 2006.

Table 24. Western Regional Dry Pea Variety Trial – North Central Research Extension Center – Minot, ND - 2006.
Data from Mark Halvorson.

Variety	Days to Bloom	Days to Maturity	Plant Ht	Plant Ht	Ht Index	Protein	Seed Weight	Test Weight	Seed Yield				
	10%	DAP	in	in	%	%	g/1000	lb/bu	2004	2005	2006	2 Year	3 Year
									bu/A	bu/A	bu/A	bu/A	bu/A
Medora (PS99102238)	46	82	21	21	98	23.3	197.1	63.3	--	--	37.7	--	--
PS0110745	41	81	17	14	82	23.1	185.2	63.1	--	42.0	38.6	40.3	--
PS0110767	42	81	17	17	100	22.5	203.2	64.8	--	43.5	36.3	39.9	--
PS0110805	46	81	19	18	96	24.6	194.3	63.8	--	44.2	40.7	42.5	--
PS02100026	42	80	19	10	56	24.1	215.9	63.0	--	--	33.2	--	--
PS02100128	44	79	19	18	95	25.4	173.6	63.6	--	--	41.8	--	--
Stirling (PS610152)	42	84	17	14	83	23.5	193.0	64.3	--	--	40.6	--	--
PS0010836	44	83	16	15	90	23.2	245.0	63.2	62.9	39.6	44.5	42.1	49.0
PS01102958	46	82	15	17	100	22.6	234.5	64.0	--	38.2	45.8	42.0	--
PS02101119	43	80	18	15	87	22.1	232.8	63.9	--	--	48.9	--	--
PS02101137	45	80	20	18	90	21.1	229.8	63.1	--	--	45.5	--	--
PS02101229	46	83	17	16	95	24.4	216.6	62.8	--	--	44.4	--	--
LSD 5%	1	2	3	4	21	1.1	27.9	0.6	10.4	9.8	5.9	--	--
C.V.%	2.3	1.3	11.6	15.1	16.1	3.2	6.0	0.6	12.3	16.5	9.8	--	--
Mean	44	81	18	16	91	23.3	210.1	63.6	58.3	41.2	41.5	--	--

DAP=Days after planting

Table 25. Field Pea Variety on Fallow, Williston Research Extension Center - 2006.
Data from Neil Riveland, North Dakota State University.

Cultivar	Days to	Canopy Height		Test	1000	Seeds/	Seed	Seed	Seed
	Bloom	cms	inches	Weight	KWT	Pound	Protein	Yield	Yield
	fr plntg			lbs/b	gms		%	Lbs/a	Bu/a
Yellow cotyledon									
Admiral	51.0	53.8	21.2	63.6	214.4	2116	22.5	1381	23.01
Eclipse	49.0	45.0	17.7	63.9	217.8	2083	22.0	1462	24.37
Miami	51.0	57.5	22.6	63.4	198.9	2280	23.9	1528	25.47
CDC Mozart	50.3	45.8	18.0	64.1	193.5	2345	21.6	1614	26.90
CDC Mozart @1.5	49.3	43.3	17.1	64.3	190.4	2382	23.0	1757	29.28
PS 01102958	52.3	50.3	19.8	63.9	190.7	2379	22.1	1555	25.92
Green cotyledon									
Nitouche	50.5	52.3	20.6	63.3	224.3	2023	22.3	1456	24.27
Majoret	51.0	50.5	19.9	63.5	202.1	2245	22.8	1154	19.24
Cruiser	50.0	53.8	21.2	62.9	179.4	2529	22.7	1383	23.04
Stirling	45.5	41.5	16.4	63.6	187.7	2417	21.7	1513	25.21
Medora	53.5	53.5	21.1	63.0	187.7	2418	21.7	1266	21.10
Scuba	48.0	54.8	21.6	64.5	191.3	2372	22.0	1249	20.82
HIGH MEAN	53.5	57.5	22.6	64.5	224.3	2529	23.9	1757	29.28
LOW MEAN	45.5	41.5	16.4	62.9	179.4	2023	21.6	1154	19.24
EXP MEAN	50.1	50.1	19.8	63.6	198.2	2299	22.3	1443	24.05
C.V. %	1.2	9.8	9.8	1.0	1.9	2	3.3	8	7.79
LSD 5%	.9	7.1	2.8	NS	8.5	102	NS	162	2.69
LSD 1%	1.2	9.5	3.7	NS	11.9	145	NS	217	3.62
# OF REPS	4	4	4	2	2	2	2	4	4
F-TRT	45.0	4.3	4.3	1.2	25.9	22	1.8	9	9.01

Location of the WREC: Latitude 48 8'; Longitude 103 44'W; Elevation 2105 ft.

Planted: April 28 on Fallow. Applied Fertilizer in lbs/a: 0N:0P2O5:0K:

Soil Test to two feet in lbs/a:93N:21P:300K: 2.1 OM pH-5.3

Soil Type: Williams-Bowbells Loam

Harvested: July 19 Harvested Area: 64 ft2

Grain protein percentages reported on a 0% moisture basis.

Table 26. Preliminary Yield Trial – Field Peas, at Williston Research Extension Center - 2006.
Data from Neil Riveland, North Dakota State University.

Cultivar	Days to Bloom	Canopy Height		Test Weight lbs/b	1000 KWT gms	Seeds/ Pound	Seed Protein %	Seed Yield lbs/acre	Seed Yield bu/acre
		cms	inches						
Stirling	45.0	32.0	12.6	64.5	184.5	2459	22.3	1530	25.50
Medora	54.0	59.0	23.2	63.5	186.9	2427	20.7	1316	21.93
PS01102958	52.0	40.0	15.7	64.4	215.9	2101	24.1	1512	25.20
PS02101224	45.0	47.0	18.5	64.8	227.8	1991	23.1	1660	27.67
PS03100116	53.0	54.0	21.3	65.2	205.5	2207	20.7	1344	22.40
PS03100471	48.0	51.0	20.1	63.6	219.3	2068	22.7	1556	25.93
PS03100546	48.0	50.0	19.7	65.3	214.9	2111	22.3	1586	26.44
PS03101340	43.0	51.0	20.1	64.8	247.6	1832	19.4	1695	28.25
PS03101347	47.0	46.0	18.1	64.1	198.5	2285	21.4	1380	23.01
PS03101349	46.0	55.0	21.7	64.6	221.6	2047	22.2	1478	24.63
PS03101445	50.0	53.0	20.9	63.7	182.4	2486	20.3	1271	21.19
PS03101459	49.0	51.0	20.1	64.3	193.4	2346	22.9	1329	22.15
PS03690011	50.0	39.0	15.4	64.6	185.9	2440	21.5	1250	20.83
PS03690197	49.0	42.0	16.5	66.7	209.8	2162	20.6	1186	19.76
PS03690293	48.0	36.0	14.2	64.8	195.6	2319	21.5	1374	22.89
PS03100278	46.0	44.0	17.3	63.9	205.0	2213	22.3	1385	23.08
PS03100280	46.0	51.0	20.1	65.6	218.5	2076	23.7	1366	22.76
PS03100411	49.0	43.0	16.9	63.5	217.0	2091	22.5	1403	23.39
PS03101815	46.0	37.0	14.6	63.3	230.8	1965	21.3	1377	22.96
PS03101822	47.0	40.0	15.7	64.7	220.9	2053	20.2	1549	25.81
PS03101847	47.0	45.0	17.7	63.7	237.8	1908	24.3	1204	20.07
PS03101867	49.0	40.0	15.7	66.1	178.1	2547	24.7	1312	21.87
PS04100204	48.0	45.0	17.7	65.5	182.4	2486	19.8	1242	20.70
PS04100282	44.0	37.0	14.6	63.8	248.0	1829	22.9	1438	23.97
PS04100450	51.0	56.0	22.0	62.1	246.0	1844	22.8	1043	17.39
PS04100453	52.0	54.0	21.3	65.0	205.2	2210	20.8	1179	19.64
PS04100473	52.0	45.0	17.7	64.6	194.3	2334	22.2	1276	21.26
PS04100543	51.0	47.0	18.5	63.4	203.8	2225	22.9	1250	20.84
PS04100546	55.0	40.0	15.7	61.1	211.2	2148	23.4	776	12.94
PS04100591	52.0	51.0	20.1	60.3	225.2	2015	24.9	1031	17.18
PS04100626	54.0	57.0	22.4	62.2	200.4	2263	23.2	1133	18.89
PS04100642	53.0	34.0	13.4	62.0	201.1	2255	23.0	1139	18.99
PS04100656	47.0	45.0	17.7	62.9	205.3	2210	22.5	1083	18.06
PS04100946	46.0	40.0	15.7	66.1	194.7	2330	22.3	1394	23.24
PS04100956	51.0	46.0	18.1	65.0	206.9	2193	24.1	1336	22.27
PS04100014	48.0	43.0	16.9	63.4	203.0	2235	21.9	1179	19.65
PS04100696	52.0	46.0	18.1	65.1	225.0	2016	22.2	1499	24.98
PS04100698	51.0	40.0	15.7	64.9	211.3	2147	22.2	1478	24.63
PS04100699	49.0	32.0	12.6	67.7	204.5	2218	20.6	1642	27.37
PS04100722	46.0	48.0	18.9	64.1	229.8	1974	22.3	1170	19.50
PS04100732	51.0	47.0	18.5	64.6	214.7	2113	22.1	1519	25.31
PS04100741	49.0	44.0	17.3	63.5	206.2	2200	21.9	1489	24.82
PS04100783	51.0	53.0	20.9	62.3	180.9	2507	24.3	1502	25.03
PS04100890	49.0	36.0	14.2	64.3	232.0	1956	21.6	1327	22.12

Table 26. Preliminary Yield Trial – Field Peas, at Williston Research Extension Center - 2005.
 Data from Neil Riveland, North Dakota State University.

Cultivar	Days to Bloom	Canopy Height		Test Weight lbs/b	1000 KWT gms	Seeds/ Pound	Seed Protein %	Seed Yield lbs/acre	Seed Yield bu/acre
		cms	inches						
DS Admiral	50.0	48.0	18.9	62.7	208.2	2179	22.8	1567	26.11
Eclipse	51.0	45.0	17.7	64.5	215.3	2107	20.8	1413	23.56
Majoret	51.0	45.0	17.7	64.6	186.1	2438	22.7	1279	21.31
Cruiser	50.0	54.0	21.3	62.2	172.1	2636	24.2	1240	20.67
HIGH MEAN	55.0	59.0	23.2	67.7	248.0	2636	24.9	1695	28.25
LOW MEAN	43.0	32.0	12.6	60.3	172.1	1829	19.4	776	12.94
EXP MEAN	49.2	45.5	17.9	64.1	208.6	2192	22.3	1348	22.46
# OF REPS	1	1	1	1	1	1	1	1	1

Location of the WREC: Latitude 48 8'; Longitude 103 44'W; Elevation 2105 ft.

Planted: April 29 on Fallow. Applied Fertilizer in lbs/a: 0N:0P2O5:0K:

Soil Test to two feet in lbs/a:93N:21P:300K: 2.1 OM pH-5.3

Soil Type: Williams-Bowbells Loam

Harvested: July 19 Harvested Area: 64 ft²

Grain protein percentages reported on a 0% moisture basis.

Table 27. Field Pea Variety of Recrop, Williston Research Extension Center - 2006.
Data from Neil Riveland, North Dakota State University.

Cultivar	Days to Bloom		Canopy Height		Test Weight	1000 KWT	Seeds/Pound	Seed Protein	Stand Est.	Seed Yield	Seed Yield
	fr plntg	cms	inches	Lbs/b	gms		%	%	Lbs/a	Bus/a	
Yellow cotyledon											
Admiral	51.0	57.0	22.4	63.1	218.4	2078	19.3	80.0	1496	24.92	
Eclipse	52.0	49.8	19.6	64.2	214.9	2111	20.8	90.0	1523	25.37	
Miami	51.3	53.0	20.9	64.1	200.5	2262	20.4	95.0	1629	27.14	
CDC Mozart	49.0	42.5	16.7	64.1	202.0	2246	20.5	95.0	1656	27.59	
PS 01102958	50.3	40.0	15.8	63.7	226.8	2000	22.8	95.0	1592	26.53	
SW Marque	50.8	57.8	22.8	63.7	176.0	2578	21.2	80.0	1591	26.50	
SW Midas	50.8	49.3	19.4	63.8	183.8	2468	17.8	80.0	1658	27.63	
SW Salute	49.8	46.3	18.2	64.6	199.8	2271	19.1	90.0	1697	28.27	
SW Capri	50.3	52.8	20.8	64.2	179.4	2529	18.4	90.0	1561	26.00	
CDC Sonata	52.8	60.5	23.8	61.4	229.2	1980	20.4	75.0	1280	21.33	
CDC Bronco	53.0	47.3	18.6	63.1	184.0	2465	20.6	60.0	1255	20.92	
CDC Golden	50.5	54.5	21.5	64.6	191.2	2374	20.7	99.0	1686	28.09	
CEB 4149	52.0	52.5	20.7	64.2	210.4	2156	21.1	99.0	1273	21.21	
CEB 4132	49.8	41.8	16.5	63.2	230.9	1965	20.7	95.0	1648	27.46	
CEB 4133	48.5	51.5	20.3	64.3	220.7	2056	18.3	95.0	1581	26.35	
Tudor	51.8	56.5	22.2	63.7	231.4	1961	18.7	99.0	1697	28.27	
CDC Mozart @1.5	49.8	40.5	15.9	65.1	196.6	2308	20.8	100.0	1909	31.81	
Green cotyledon											
Nitouche	50.5	56.3	22.1	62.6	235.9	1923	20.0	90.0	1576	26.24	
Majoret	51.5	49.5	19.5	64.1	205.1	2212	19.9	80.0	1394	23.22	
Cruiser	50.3	54.0	21.3	63.5	184.7	2456	19.3	80.0	1461	24.35	
Stirling	45.5	39.3	15.4	63.4	187.8	2415	19.4	85.0	1520	25.33	
Medora	53.3	54.0	21.3	63.2	187.6	2418	18.3	80.0	1182	19.69	
Cooper	55.0	57.0	22.5	63.3	228.9	1982	20.4	90.0	1697	28.29	
K-2	47.5	47.3	18.6	64.1	195.0	2328	19.3	50.0	1416	23.59	
SW C-6198	52.0	60.5	23.8	63.8	200.3	2264	19.1	90.0	1344	22.40	
CDC Striker	51.8	52.3	20.6	64.6	204.1	2222	21.4	95.0	1561	26.01	
CDC Sage	51.8	50.0	19.7	62.7	183.4	2476	18.1	50.0	1074	17.89	
CEB 1090	54.5	54.8	21.6	62.7	240.9	1884	19.6	90.0	1463	24.39	
AP-18	53.0	46.3	18.2	63.2	186.1	2437	19.6	90.0	1279	21.31	
Camry	49.0	39.8	15.7	62.9	212.6	2134	19.3	90.0	1779	29.64	
Aragon	48.8	47.0	18.5	63.4	183.7	2470	18.9	95.0	1487	24.78	
PRO-011-3172	47.0	47.5	18.7	63.7	191.9	2366	16.9	95.0	1505	25.08	
Scuba	49.0	49.5	19.5	64.5	190.4	2382	18.1	95.0	1028	17.13	
Monterro	52.8	45.5	17.9	64.3	191.3	2373	19.4	100.0	1604	26.73	
Stirling @1.5x	45.0	37.0	14.6	63.7	186.1	2437	19.4	100.0	1816	30.26	

Table 27. Field Pea Variety of Recrop, Williston Research Extension Center - 2006.
Data from Neil Riveland, North Dakota State University.

Cultivar	Days to Bloom	Canopy Height		Test Weight	1000 KWT	Seeds/Pound	Seed Protein	Stand Est.	Seed Yield	Seed Yield
	fr plntg	cms	inches	Lbs/b	gms		%	%	Lbs/a	Bus/a
Marrowfat										
Orka	49.8	54.3	21.4	62.5	330.5	1373	18.2	50.0	1321	22.00
High Mean	55.0	60.5	23.8	65.1	330.5	2578	22.8	100.0	1909	31.81
Low Mean	45.0	37.0	14.6	61.4	176.0	1373	16.9	50.0	1028	17.13
Exp Mean	50.6	49.9	19.6	63.6	206.2	2232	19.6	86.4	1507	25.10
CV%	1.1	11.0	11.0	.6	1.7	2	2.8	7	6.61	
LSD 5%	.8	7.7	3.0	.7	7.0	79	1.1	140	2.33	
LSD 1%	1.0	10.1	4.0	1.0	9.4	105	1.5	186	3.09	
# of Reps	4	4	4	2	2	2	2	1	4	4
F-TRT	68.7	5.2	5.2	9.1	131.7	80	9.8	.0	16	16.34

Relative efficiency Lattice analysis vs RCBD for yield = 136%

Location of the WREC: Latitude 48 8'; Longitude 103 44'W; Elevation 2105 ft.

Planted: April 28 into tilled durum stubble.

Applied Fertilizer in lbs/a: 70N:0P2O5:0K:

Soil Test to two feet in lbs/a: 31N:14P:320K: 2.0% OM pH-5.9

Soil Type: Williams-Bowbells Loam

Harvested: July 19 Harvested Area: 64 ft2

Grain protein percentages reported on a 0% moisture basis.

Trifluralin at 1.0 lbs/a ai PPI and Assure II postemergence gave good weed control.

Table 28. Dry Pea Variety Trial at Hayes, SD - 2006.
Data from John Rickertsen, South Dakota State University.

Variety	Height Inches	Lodging 0-9	Test Wt Lb/Bu	Yield Bu/AC	Yield Kg/Ha	Yield Lb/Ac
MEDORA (PS99102238)	15.5	0		16.1	1084	966
PS0110745	11.0	0		12.8	859	768
PS0110767	11.5	0	61.9	15.2	1025	912
PS0110805	15.5	0		11.9	801	714
PS02100026	13.0	0		11.0	742	660
PS02100128	13.5	0		15.2	1025	912
STIRLING (PS610152)	10.5	0		13.9	937	834
PS0010836	11.5	0		15.5	1045	930
PS01102958	11.0	0		16.0	1074	960
PS02101119	11.5	0	60.2	21.9	1475	1314
PS02101137	12.5	0	60.9	16.8	1133	1008
PS02101229	12.0	0		15.7	1055	942
SW SALUTE	15.0	0	61.4	17.9	1201	1074
CDC MOZART	12.0	0		16.3	1094	978
LSD (P=.05)	2.4	0.0	3.7	3.8	251.9	224.2
Grand Mean	12.6	0.0	61.1	15.5	1039	925
CV	8.9	0.0	2.4	17.0	17.0	17.0
Treatment F	4.557	0	0.815	4.15	4.15	4.15
Treatment Prob(F)	0.0051	1	0.5649	0.0003	0.0003	0.0003

Table 29. Dry Pea Variety Trial at Wall, SD - 2006.
 Data from John Rickertsen, South Dakota State University.

Variety	Height Inches	Lodging 0-9	Test Wt Lb/Bu	Yield Bu/Ac	Yield Kg/Ha
MEDORA (PS99102238)	18.5	1.0	58.6	28.7	1933
PS0110745	16.0	0.0	59.1	23.5	1582
PS0110767	16.0	1.0	57.9	24.1	1621
PS0110805	17.5	0.0	59.0	23.5	1582
PS02100026	15.0	0.0	59.2	23.7	1592
PS02100128	17.0	0.5	58.3	21.1	1416
STIRLING (PS610152)	14.5	1.0	58.8	25.8	1738
PS0010836	17.0	0.5	58.7	31.2	2099
PS01102958	17.5	2.0	58.6	28.2	1894
PS02101119	17.0	2.0	59.0	30.9	2080
PS02101137	18.5	1.0	57.5	29.0	1953
PS02101229	15.0	0.0	58.6	30.6	2060
SW SALUTE	19.0	0.0	59.6	29.9	2012
CDC MOZART	20.0	0.0	59.5	29.2	1963
LSD (P=.05)	3.7	1.7	1.2	4.0	269.3
Grand Mean	17.0	0.6	58.7	27.1	1823
CV	10.1	125.3	1.4	10.3	10.3
Treatment F	1.793	1.593	1.814	5.817	5.817
Treatment Prob(F)	0.1525	0.2061	0.0756	0.0001	0.0001

Winter Feed Pea Trials

Five winter feed pea entries were included in the 2006 Winter Feed Pea Western Regional Yield Trial and evaluated at 8 locations across five states. Data were collected from four locations, while the remaining locations suffered from poor stand establishment and/or severe winter kill and were abandoned in spring. All five entries represent the most advanced breeding lines from the USDA-ARS breeding program and included all were yellow cotyledon types. 'Specter' and 'Windham' are two white-flowered winter feed pea types released from the program. Information regarding experimental design, location and specific observations for some of the locations are included below. Among the locations returning results for all five lines the highest yielding line was PS9830F011 (2214 lb/a) followed by PS03100635 (2088 lb/a). Specter produced an average yield of 1845 lb/a.

Table 30. Summary of Locations Participating in the 2006 Winter Feed Pea Western Regional Yield Trial.

Location	Contact	Conditions	Nurseries		
			Seed Sent	Data Returned	Data Lost
<i>Montana</i>					
Moccasin	Chengci Chen, Karnes Neill	Dryland	✓	✓	
Kalispell	Duane Johnson, Louise Strang	Dryland	✓		✓
<i>North Dakota</i>					
Hettinger	Eric Eriksmoen	Dryland	✓		✓
<i>South Dakota</i>					
Wall	John Rickertsen	Dryland	✓		✓
<i>Washington</i>					
Pullman	Rob Gallagher, DennisPittman	Dryland	✓		✓
Waterville	Howard Nelson	Dryland	✓	✓	
Wilbur	Howard Nelson	Dryland	✓	✓	
Wilke	Howard Nelson	Dryland	✓	✓	
Grand Totals			8	4	4

Table 31. Post Harvest Quality Evaluations of Winter Feed Pea Lines in the Western Regional Pea Trials - 2006

Cultivar	Weight 100 Seeds	Water Uptake	Hard Seed	Conductivity us/g	Post Soak Seed Color	Post Soak Bleach	Cooking Time	Post Cook Seed Color	Post Cook Broth Color	Seed Coat Seperates	Cooked To Mush
	g	%	%			%	minutes				
Specter	12.93	109.52	0.3	54.56	G	0	20.67	G	5	Y	N
PS0230F063	12.73	115.46	0.3	43.91	G	0	16.67	G	5	N	N
PS0230F092	13.53	113.84	0	35.71	G	0	22.67	G	5	N	N
Windham	14.83	108.98	0.6	46.15	G	0	22.67	G	5	N	N
PS03100635	12.47	109.17	0.6	31.47	G	0	19.33	F	6	Y	Y
PS03101146	15.2	110.09	0	52.63	G	4.6	18.67	G	5	N	N
PS03101160	16.13	114.65	0	38.02	G	4.6	21.33	G	5	N	N

Seed used for post harvest quality evaluations was grown at Pullman, WA in 2006.

Conductivity is expressed as microsiemens per gram of seed.

Post Seed Soaking Color Evaluation: G = Good; F = Fair; P = Poor.

Cooking time determined by removing a small sub-sample at two minute intervals and mashed with a fork until deemed cooked.

Post Cooking Seed Color is rated as: G = Good; F = Fair; P = Poor.

Post Cooking Broth Color is rated as: 4 = dark; 5 = Light; 6 = Muddy.

Seed Coat Separates From Cotyledon (Sloughs) During Cooking: Y = Yes; N = No.

Seed Cooks To Mush (Looses Rigidity And Individual Seed Identity): Y = Yes; N = No.

Cooking tests conducted on each of three seed lots soaked for 20 hours.

All data in the above table is the average of three 100 seed sub-samples.

Table 32. Location Yield Summary (lb/a) for Western Regional Winter Feed Peas

Location	Windham			Specter	
	PS9830F011	PS9830S358	PS03100635	PS03100660	PS9830F009
Moccasin, MT	3151	2714	2783	2149	2600
Wilbur, WA	1980	1558	1742	1399	1346
Waterville, WA	1901	2191	2006	2085	1954
Wilke, WA	1822	1769	1822	1267	1479
Grand Mean	2214	2058	2088	1725	1845

Grand mean taken from locations with a complete set of data.

Table 33. Western Regional Winter Dry Pea Trial - Dry-land winter dry pea agronomy results. Exp. 820706, Central Ag Research Center, Moccasin, MT - 2006. Data from Chengci Chen and Karnes Neill.

Selection	Biomass (Forage)		-----Dry Pea Grain Production-----				
	Plant Ht	Dry Matter	Plant Height	Yield	Test Wt	Moisture	Ht Index
	in	lbs/a	in	lbs/acre	lbs/bu	%	grnHt / bioHt
	38.4 ^a	4,382 ^a	31.8 ^a	2,149	63.6	10.3 ^a	0.84
PS9430706	25.3	4,025 ^a	22.7	2,641	62.6	10.0	0.92
PS7530726	36.7 ^a	3,858 ^a	31.6 ^a	2,907 ^a	63.1	9.9	0.86
PS9630448	35.6 ^a	3,247	29.5 ^a	2,902 ^a	63.3	10.1	0.83
PS9830F009 (Specter)	37.3 ^a	4,126 ^a	29.1 ^a	2,600	63.0	10.0	0.79
PS9830F010	20.6	3,355	27.3	2,830 ^a	63.7 ^a	10.2	1.33 ^a
PS9830F011	19.2	2,771	28.3 ^a	3,151 ^a	63.4	10.3 ^a	1.47 ^a
PS9830S358 (Windham)	28.7	3,019	26.4	2,714	63.9 ^a	10.0	0.92
PS9830S431	35.4 ^a	3,532	30.6 ^a	2,941 ^a	64.4 ^a	10.5 ^a	0.86
Granger	35.0	3,788 ^a	29.0 ^a	2,664	62.8	10.2	0.83
Specter	28.6	2,791	29.2 ^a	2,733	63.6	10.3 ^a	1.02
PS03100635	27.2	2,593	26.5	2,783	63.3	10.0	0.98
PS03100660	38.4 ^a	4,382 ^a	31.8 ^a	2,149	63.6	10.3 ^a	0.84
PS9430706	25.3	4,025 ^a	22.7	2,641	62.6	10.0	0.92
Means (<i>n</i> = 48)	30.7	3,457	28.5	2,751	63.4	10.1	0.97
LSD _{0.05} (by t)	3.2	797	4.1	368	0.7	0.3	0.15
C.V. % (<i>s</i> /means)	7.27	16.02	9.99	9.29	0.77	2.12	10.84
F-Value (11,33 df)	35.78	4.52	3.16	3.65	3.95	2.55	16.46
p-Value (by F)	0.000	0.000	0.005	0.002	0.001	0.019	0.000
MSE (33 df)	32.07	3.1E+01	52.31	6.5E+04	0.2359	4.6E-02	1.1E-02

^a - Denotes values equal highest value (in **bold**) based on LSD_(0.05).

Table 34. Agronomic Data for Western Regional Winter Pea Yield Trial at Wilke, WA - 2006.
Data from Howard Nelson.

Variety	Class	Company	Vine Type ¹	Start Bloom	Finish Bloom	Days in Bloom	Relative Maturity ²	Max Plant Height (in)	Mat Plant Height (in)	Plant Height Index ³	Weight Per 100 Seeds (g) ⁴	Yield lbs/ac
Whistler	Yellow Pea	ProGene	AF-Short	30-May	5-Jul	36	3	24	18	0.750	16.0	1584
Specter	Yellow Pea	WSU	AF-Tall	5-Jun	5-Jul	30	3	46	16	0.348	13.0	1479
PS9830F011	Yellow Pea	WSU	AF-Short	23-May	5-Jul	43	1	26	20	0.769	13.0	1822
Windham	Yellow Pea	WSU	AF-Short	30-May	5-Jul	36	1	28	20	0.714	13.0	1769
PS0230F061	Green Pea	WSU	AF-Short	23-May	5-Jul	43	5	29	18	0.621	14.3	1452
PS0230F092	Green Pea	WSU	AF-Short	23-May	5-Jul	43	3	24	14	0.583	13.7	2244
PS0230F210	Yellow Pea	WSU	Normal	23-May	5-Jul	43	3	40	12	0.300	16.7	1901
PS03100635	Yellow Pea	WSU	Normal	23-May	5-Jul	43	1	36	16	0.444	11.3	1822
PS03100660	Yellow Pea	WSU	Normal	23-May	5-Jul	43	2	36	14	0.389	11.0	1267
PS03101133	Yellow Pea	WSU	Normal	5-Jun	5-Jul	30	4	42	16	0.381	12.7	1584
PS03101146	Green Pea	WSU	AF-Short	30-May	5-Jul	36	2	28	12	0.429	13.7	1637
PS03101150	Green Pea	WSU	AF-Short	30-May	5-Jul	36	5	30	20	0.667	13.0	1399
PS03101160	Yellow Pea	WSU	AF-Short	23-May	5-Jul	43	3	31	12	0.387	13.3	2138

1 - AF = Afilia Type (Leafless) Vine

2 - 1 = Earlier Maturity, 5 = Later Maturity

3 - Plant Height Index = Mature Plant Height /Maximum Plant Height

4 - Average Spring Yellow Wt = 21.1g, Average Spring Green Wt = 19.4g, USDA/ARS 2005 Progress Report

Table 35. Winter Pea Variety Trial at Wilbur, WA - 2006.
Data from Howard Nelson.

Variety	Class	3-Year Average		2-Year Average		2006 Yield		2005 Yield		2004 Yield	
		Lbs/acre		Lbs/acre		Lbs/acre		Lbs/acre		Lbs/acre	
PS9830F011	Yellow	2,616	(1)	2,805	(1)	1,980	(1)	3,630	(1)	2,239	(3)
Whistler	Yellow	2,578	(2)	2,664	(2)	1,769	(3)	3,558	(2)	2,408	(2)
Specter	Yellow	2,353	(3)	2,107	(4)	1,346	(8)	2,868	(4)	2,844	(1)
Windham	Yellow	2,282	(4)	2,473	(3)	1,558	(6)	3,388	(3)	1,900	(4)
PS03101150	Green					1,848	(2)				
PS03100635	Yellow					1,742	(4)				
PS03101160	Yellow					1,663	(5)				
PS03100660	Yellow					1,399	(7)				
PS0230F092	Green					1,346	(9)				
PS0230F061	Green					1,188	(10)				
PS03101146	Green					1,162	(11)				
PS0230F210	Yellow					1,056	(12)				
PS03101133	Yellow					1,003	(13)				

Table 36. Winter Pea Variety Trial at Waterville, WA - 2006.
Data from Howard Nelson.

Variety	Class	3 Year Average		2-Year Average		2006 Yield		2005 Yield		2004 Yield	
		Lbs/acre		Lbs/acre		Lbs/acre		Lbs/acre		Lbs/acre	
Windham	Yellow	2,723	(1)	2,644	(1)	2,191	(6)	3,097	(1)	2,880	(1)
Whistler	Yellow	2,421	(2)	2,506	(2)	2,059	(8)	2,953	(3)	2,251	(2)
PS9830F011	Yellow	2,255	(3)	2,451	(3)	1,901	(13)	3,001	(2)	1,863	(3)
Specter	Yellow	2,027	(4)	2,163	(4)	1,954	(12)	2,372	(4)	1,755	(4)
PS03101133	Yellow					2,561	(1)				
PS03101160	Yellow					2,402	(2)				
PS0230F092	Green					2,402	(3)				
PS03101146	Green					2,376	(4)				
PS0230F210	Yellow					2,323	(5)				
PS03100660	Yellow					2,085	(7)				
PS0230F061	Green					2,033	(9)				
PS03101150	Green					2,006	(10)				
PS03100635	Yellow					2,006	(11)				
Windham	Yellow	2,723	(1)	2,644	(1)	2,191	(6)	3,097	(1)	2,880	(1)

Lentil Trials

Twenty spring lentil entries in the Western Regional Yield Trial were evaluated at 11 locations across five states (Table 40). The entries comprised three checks, 'Pennell', 'Merrit' and 'Richlea', 'Eston', 'Pardina', 'Crimson' and 14 breeding lines including seven Laird, three Eston, one Pardina and three Turkish Red types. Information regarding experimental design, location and specific observations for some of the locations are included below. The highest yielding line was LC1602307E (1295 lb/a) and the checks produced average yields of 1073, 1075, 1196, 1154, 1145, and 1086 lb/a for Pennell, Merrit, Richlea, Eston, Pardina, and Crimson, respectively. LC860616L, a line proposed for release, produced average yield of 1085 lb/a.

Table 37. Summary of Locations Participating in the 2006 Spring Lentil Western Regional Yield Trial.

Location	Contact	Conditions	Seed Sent	Nurseries Data Returned	Data Lost
<i>Idaho</i>					
Moscow	Stephen Guy	Dryland	✓	✓	
Nezperce	Stephen Guy	Dryland	✓	✓	
Tammany	Larry Smith	Dryland	✓		✓
<i>Montana</i>					
Kalispell	Duane Johnson, Louise Strang	Dryland	✓	✓	
Moccasin	Chengci Chen, Karnes Neill	Dryland	✓	✓	
<i>North Dakota</i>					
Carrington	Blaine Schatz, Steve Zwinger	Dryland	✓	✓	
Hettinger	Eric Eriksmoen	Dryland	✓	✓	
Minot	Mark Halvorson	Dryland	✓	✓	
Williston	Neil Riveland	Dryland	✓	✓	
Grand Totals			9	8	1

Table 38. Location Yield Summary (lb/a) for Western Regional Lentil Trials

Line	Moscow, ID	Nezperce, ID	Kalispell, MT	Moccasin, MT	Carrington, ND	Hettinger, ND	Minot, ND	Williston, ND	Grand Mean
LC860359L			1277	667	1771	73	1853	448	1015
LC860616L	2150	650	1638	582	2103	156	1508	455	1074
LC99600747L	1960	500	1270	533	1839	71	1728	444	981
LC01600724L			1065	642	1817	62	1574	422	930
LC02600793L			1144	552	1736	95	1375	510	902
LC01602300R	1760	790	1732	686	2106	281	2073	659	1256
LC02600193R			1770	618	1720	287	1536	542	1079
LC01602273E	1910	750	2369	513	1971	448	1598	394	1216
LC01602307E	1860	890	1706	834	2444	487	1848	499	1303
LC03601590E			2174	449	2338	357	2030	364	1285
LC02601144P	1370	810	1085	479	2354	291	1377	437	1004
LC01602062T	1650	900	1811	599	1901	221	1249	477	1043
LC02601276T	1750	710	1358	640	2029	277	1321	396	1004
LC03600482T	1550	750	913	495	1442	101	923	389	711
Pennell	1370	660	1306	649	2027	130	1801	442	1059
Merrit	1890	700	1440	480	1629	155	1362	525	932
Richlea	1810	810	1704	652	2177	262	1865	567	1205
Eston	1540	790	1235	506	2090	186	1435	494	991
Pardina	1540	910	1699	635	2009	312	1024	333	1002
Crimson	1630	790	2208	487	1511	300	1375	398	1047

Grand Mean taken from locations with a complete set of data.

Table 39. Post Harvest Quality Evaluations of Lentil Lines in the Western Regional Lentil Trials - 2006

Cultivar	Weight 100 Seeds ..g..	Water Uptake ..%..	Hard Seed ..%..	Conductivity ..us/g..	Post Soak Seed Color	Post Soak Bleach ..%..	Cooking Time ..minutes..	Post Cook Seed Color	Post Cook Broth Color	Seed Coat Separates	Cooked To Mush
ESTON	3.43	83.64	10.7	24.76	G	0.0	24.67	2	6	N	N
LC01602307E	4.20	102.15	4.0	26.51	G	0.0	23.33	1	4	Y	N
LC01602273E	3.63	100.86	3.7	24.74	G	0.0	24.67	2	6	Y	N
LC03601590E	3.77	108.42	2.3	26.24	G	0.0	25.33	1	4	N	N
PARDINA	3.77	87.95	6.3	23.54	G	0.0	27.33	2	6	Y	N
LC02601144P	3.87	96.80	3.3	25.8	G	0.0	27.33	2	6	Y	N
CRIMSON	3.40	104.19	2.0	22.95	G	0.0	26.00	1	6	Y	N
LC01602062T	4.63	95.46	3.7	20.85	G	0.0	25.33	1	4	Y	N
LC02601276T	3.50	84.08	9.7	25.13	G	0.0	28.67	2	6	Y	N
LC03600482T	3.07	73.23	11.3	22.3	G	0.0	28.00	1	4	Y	N
MERRITT	6.33	112.44	3.0	26.07	G	0.0	24.67	1	6	Y	N
LC860359L	6.47	110.75	1.7	36.9	G	0.0	24.67	1	6	Y	N
LC860616L	6.73	113.98	0.7	48.12	G	0.0	25.33	1	4	Y	N
LC99600747L	6.63	116.60	1.3	46.48	G	0.0	26.00	1	4	Y	N
RICHLEA	5.20	111.15	1.3	30.48	G	0.0	27.33	1	4	Y	N
PENNELL	6.30	112.24	2.3	31.15	G	0.0	24.67	1	4	N	N
LC01600724L	6.13	104.05	7.7	36.93	G	0.0	26.67	1	6	Y	N
LC01602300R	6.10	94.01	7.7	32.62	G	0.0	27.33	1	6	Y	N
LC02600193R	5.70	97.05	5.3	33.78	G	0.0	28.00	1	6	Y	N
LC02600793L	7.17	84.05	12.7	50.48	G	0.0	22.67	1	5	Y	N

Seed used for post harvest quality evaluations was grown at Pullman, WA in 2006.

Conductivity is expressed as microsiemens per gram of seed.

Post Seed Soaking Color Evaluation: G = Good; F = Fair; P = Poor.

Cooking time determined by removing a small sub-sample at two minute intervals and mashed with a fork until deemed cooked.

Post Cooking Seed Color is rated as: 1 = Good; 2 = Fair; 3 = poor.

Post Cooking Broth Color is rated as: 4 = dark; 5 = Light; 6 = Muddy.

Seed Coat Separates From Cotyledon (Sloughs) During Cooking: Y = Yes; N = No.

Seed Cooks To Mush (Looses Rigidity And Individual Seed Identity): Y = Yes; N = No.

Cooking tests conducted on each of three seed lots soaked for 18 hours.

All data in the above table is the average of three 100 seed sub-samples.

Table 40. Lentil variety performance results at Nezperce and Moscow, ID - 2006.
 Data from Stephen Guy, University of Idaho.

Variety or Selection	Seed Yield			Seed Weight			Plant Height		
	Nezperce	Moscow	Average	Nezperce	Moscow	Average	Nezperce	Moscow	Average
	lb/acre			g/100			inches		
Brewer	710	1740	1230	4.6	5.7	5.2	13	11	12
Crimson	790	1630	1210	2.8	3.4	3.1	11	9	10
Eston	790	1540	1170	2.6	3.3	3.0	11	11	11
Merrit	700	1890	1300	5.2	6.4	5.8	13	11	12
Pardina	910	1540	1230	3.0	3.7	3.4	11	10	11
Pennell	660	1370	1020	5.4	6.4	5.9	13	12	13
Richlea	810	1810	1310	4.3	5.1	4.7	13	13	13
LC860616L	650	2150	1400	6.2	7.3	6.8	14	14	14
LC99600747L	500	1960	1230	5.8	6.8	6.3	13	14	14
LC01602300R	790	1760	1280	4.1	4.8	4.5	11	13	12
LC01602307E	890	1860	1380	3.4	4.2	3.8	12	13	13
LC01602273E	750	1910	1330	2.9	3.6	3.3	11	12	12
LC01602062T	900	1650	1280	3.7	4.7	4.2	12	11	12
LC02601276T	710	1750	1230	2.9	3.5	3.2	13	14	14
LC03600482T	750	1550	1150	2.6	3.0	2.8	11	12	12
LC02601144P	810	1370	1090	3.2	3.9	3.6	12	11	12
Average	760	1720	1240	3.9	4.7	4.3	12	12	12
LSD (0.10)	152	184	119	0.2	0.2	0.1	2	1	1
CV (%)	17	9	-	3.3	2.7	-	12	10	-

Table 41. Seed yield averages for lentil varieties tested for three years in northern Idaho. Data from Stephen Guy, University of Idaho.

Variety or Selection	2004	2005	2006	Average
	-----lb/acre-----			
Brewer	2850	1490	1230	1660
Crimson	2100	1350	1210	1440
Eston	2470	1390	1170	1520
Merrit	2820	1450	1300	1660
Pardina	2850	1530	1230	1670
Pennell	2060	1020	1010	1220
Richlea	2570	1320	1310	1570
LC860616L	2710	1280	1400	1610
LC1602307E	2250	1370	1380	1550
LC1602062T	2670	1510	1280	1650
Average	2540	1370	1250	1560
LSD (0.10)	270	90	119	-

Table 42. No-till lentil variety performance results at Genesee and Moscow - 2006.
 Data from Stephen Guy, University of Idaho.

Variety or Selection	Seed Yield			Seed Weight			Plant Height		
	Genesee	Moscow	Average	Genesee	Moscow	Average	Genesee	Moscow	Average
	-----lb/acre-----			-----g/100-----			-----inches-----		
Brewer	890	460	680	5.4	4.5	5.0	14	14	14
Eston	1100	480	790	3.2	2.7	3.0	14	13	14
Merrit	980	590	790	5.7	5.2	5.5	14	14	14
Pardina	940	900	920	3.6	3.0	3.3	11	13	12
Pennell	520	140	330	6.8	5.3	6.1	15	13	14
Richlea	1140	560	850	5.0	4.3	4.7	16	14	15
Average	930	520	730	4.9	4.2	4.6	14	14	14
LSD (0.10)	185	146	117	0.3	0.2	0.2	2	NS	-
CV (%)	16	23	-	4.2	3.8	-	11	10	-

Table 43. Seed yield averages for no-till lentil varieties tested for three years in northern Idaho.
 Data from Stephen Guy, University of Idaho.

Variety or Selection	Seed Yield				Seed Weight			
	2004	2005	2006	Average	2004	2005	2006	Average
	-----lb/acre-----				-----g/100-----			
Brewer	2180	1170	680	1340	5.5	5.4	5.0	5.3
Eston	2160	1040	790	1330	3.2	3.1	3.0	3.1
Merrit	2280	1220	790	1430	5.9	5.9	5.5	5.8
Pardina	2280	1440	920	1550	3.6	3.8	3.3	3.6
Pennell	2260	1370	330	1320	6.5	6.1	6.1	6.2
Richlea	2680	1280	850	1600	4.8	4.6	4.7	4.7
Average	2310	1260	730	1430	4.9	4.8	4.6	4.8
LSD (0.10)	160	220	117	96	0.2	0.1	0.2	0.1

Table 44. Western Regional Lentil Yield Trial at Kalispell, MT - 2006
 Data from Duane Johnson and Louise Strang, Montana State University.

Cultivar	Stand pl/sqft	Bloom date	Maturity date	Height in	Yield lbs/a	SeedWt #/lb
Pennell	14.9	6/18	8/6	20.7	1306	6267
LC860359L	15.4	6/21	8/7	23.7	1277	6027
LC860616L	15.7	6/16	8/8	25.0	1638	6460
LC99600747L	13.8	6/17	8/7	24.7	1270	6551
LC01600724L	15.1	6/20	8/6	20.3	1065	6579
LC02600793L	12.8	6/16	8/8	21.7	1144	5782
Merrit	13.0	6/16	8/7	21.7	1440	7008
Richlea	17.4	6/19	8/7	24.3	1704	8680
LC01602300R	16.8	6/19	8/8	23.3	1732	8934
LC02600193R	14.2	6/17	8/6	20.7	1770	8373
Eston	15.0	6/17	8/7	22.3	1235	13181
LC01602273E	16.1	6/17	8/6	22.0	2369	12506
LC01602307E	17.1	6/19	8/9	24.3	1706	10086
LC03601590E	16.1	6/18	8/7	23.0	2174	11279
Pardina	16.6	6/17	8/6	19.7	1699	11317
LC02601144P	14.8	6/17	8/8	21.7	1085	11267
Crimson	14.6	6/18	8/7	18.7	2208	12161
LC01602062T	14.9	6/17	8/8	22.0	1811	9500
LC02601276T	14.1	6/19	8/11	21.7	1358	12123
LC03600482T	13.6	6/16	8/8	16.7	913	14495
mean	15.1			21.9	1545	9429
Pr>F	0.7369			0.0003	0.0005	< 0.0001
LSD(0.05)	NS			3.2	609	856
CV(%mean)	17.4			8.7	24.0	5.5

Table 45. Western Regional Lentil Trial - Dry-land lentil agronomic summary. Exp. 860706, Central Ag Research Center, Moccasin, MT - 2006. Data from Chengci Chen and Karnes Neill.

Selection	Flowering % @ 6/15/06	Canopy Height cm	Yield lbs/ac	Seed Wt g/1,000	Test Wt lbs/bu	Moisture %
CDC Vantage	67.5	11.8 ^a	766 ^a	47.8	62.5	8.7
Pennell	25.0	10.0 ^a	649	61.5	59.8	8.5
LC860359L	13.8	11.9 ^a	667	64.5	60.7	8.8 ^a
LC860616L	77.5 ^a	11.6 ^a	582	66.8 ^a	58.7	8.6
LC99600747L	76.3 ^a	12.5 ^a	533	63.0	59.4	8.6
LC01600724L	12.5	9.5 ^a	642	58.7	59.6	8.5
LC02600793L	42.5	11.1 ^a	552	66.7 ^a	59.8	8.6
Brewer	86.3 ^a	10.7 ^a	496	51.5	60.7	8.3
Merrit	86.3 ^a	10.3 ^a	480	60.3	57.7	8.3
Richlea	53.8	10.4 ^a	652	49.9	61.1	8.9 ^a
LC01602300R	68.8	11.1 ^a	686	46.1	62.5	8.7
LC02600193R	83.8 ^a	9.5 ^a	618	46.6	61.2	8.9 ^a
Eston	71.3	9.3 ^a	506	29.4	64.6	8.4
LC01602273E	86.3 ^a	8.8	513	32.8	64.5	9.0 ^a
LC01602307E	76.3 ^a	9.7 ^a	834 ^a	40.7	63.1	8.7
LC03601590E	61.3	8.2	449	35.0	63.3	8.8 ^a
Pardina	88.8 ^a	8.6	635	35.3	65.2 ^a	8.8 ^a
LC02601144P	84.3 ^a	10.2 ^a	479	34.0	65.0	8.2
Crimson	67.5	8.7	487	31.1	62.7	8.5
LC01602062T	83.8 ^a	8.9	599	40.9	63.9	8.6
LC02601276T	7.5	9.9 ^a	640	32.7	66.4 ^a	8.4
LC03600482T	83.8 ^a	10.5 ^a	495	27.5	66.8 ^a	8.2
Mean (n = 96)	63.8	10.2	589	46.5	62.2	8.6
LSD (0.05 by t)	16.3	3.3	136	1.8	1.7	0.2
CV% (s/means)	18.0	9.1	16	2.7	1.9	1.9
F-Value (23,69 df)	21.15	6.7	4.38	446.3	18.54	7.08
P-Value (by F)	0.000	0.000	0.000	0.000	0.000	0.000
MSE (63 df)	132.59	5.5	9211.3	1.5	1.4116	0.028

^a - Denotes values equal to highest value (in bold) based on LSD(0.05).

Table 46. NDSU Carrington Research Extension Center Western Regional Lentil Variety Trial at Carrington - 2006.
Data from Blaine Schatz and Steve Zwinger, North Dakota State University.

Variety	Market Class	Days to Bloom	Days to PM	Plant Height cm	Plant Lodge 0 - 9	1000 KWT gms	Seeds / Pound	Test Weight lbs/bu	Seed Yield lb/acre
Merrit	Brewer	47.0	83.3	32.3	1.3	59.8	7,605	58.6	1629
Crimson	Crimson	51.3	80.3	23.0	2.7	33.4	13,584	62.1	1511
Eston	Eston	50.3	81.0	33.0	0.0	33.4	13,607	62.4	2090
LC01602273E	Eston	51.0	79.7	32.7	0.7	34.3	13,224	62.2	1971
LC01602307E	Eston	52.3	86.0	29.3	1.0	43.6	10,413	61.3	2444
LC03601590E	Eston	54.3	82.0	34.0	0.0	36.5	12,428	61.8	2338
LC01600724L	Laird	54.3	85.7	22.7	3.0	62.4	7,283	58.5	1817
LC02600793L	Laird	50.3	88.7	19.7	4.0	68.2	6,656	59.1	1736
LC860359L	Laird	56.7	88.3	25.7	1.7	62.8	7,226	59.9	1771
LC860616L	Laird	51.3	88.3	29.3	1.7	70.1	6,475	58.4	2103
LC99600747L	Laird	50.7	86.3	25.3	3.3	62.7	7,245	59.3	1839
Pennell	Laird	51.7	86.3	35.7	0.3	65.0	6,985	58.6	2027
LC02601144P	Pardina	49.3	86.0	32.0	1.0	37.5	12,122	62.5	2354
Pardina	Pardina	49.0	82.7	23.3	2.0	36.8	12,358	63.2	2009
LC01602300R	Richlea	51.0	85.7	34.3	0.3	48.8	9,312	60.8	2106
LC02600193R	Richlea	49.0	82.3	31.3	1.0	48.9	9,283	60.9	1720
Richlea	Richlea	52.0	84.0	31.0	1.0	50.3	9,021	59.7	2177
LC01602062T	Turkish Red	48.7	81.3	28.0	1.0	41.9	10,834	61.7	1901
LC02601276T	Turkish Red	53.0	86.7	33.0	0.7	34.0	13,369	63.8	2029
LC03600482T	Turkish Red	49.3	81.0	30.0	1.7	30.5	14,889	60.5	1442
MEAN		51.1	84.3	29.3	1.4	48.3	10116	60.8	1959
C.V.%		1.2	2.3	10.8	42.6	2.1	2.0	0.5	13.7
LSD.05		1.0	3.2	5.2	1.0	1.7	340	0.5	444
LSD.01		1.3	4.3	7.0	1.3	2.2	456	0.6	597
#REPS		3	3	3	3	3	3	3	3

Planting Date = April 26 ; Windrow Date = July 24 ; Harvest Date = July 28 ; Previous Crop = Durum

Table 47. NDSU Carrington Research Extension Center Lentil Variety Trial - 2006.
Data from Blaine Schatz and Steve Zwinger, North Dakota State University.

Variety	Seed Coat Color	Market Type	Days to Bloom	Day to PM	Plant Height cm	Plant Lodge 0 - 9	1000 KWT gms	Seeds / Pound	Test Weight lbs/bu	Seed Yield lb/acre
CDC Blaze	Red	Small	46.3	75.5	23.3	2.0	32.2	14,115	62.7	1962
CDC Glamis	Green	Large	50.8	80.0	23.8	2.3	57.2	7,954	59.9	1413
CDC LeMay	Green	French	49.3	76.0	20.0	3.3	29.4	15,436	63.1	1717
CDC Meteor	Green	Large	49.0	77.0	21.8	3.0	46.5	9,763	61.8	1884
CDC Milestone	Green	Small	45.3	75.8	22.3	2.8	32.5	13,996	62.1	1613
CDC Plato	Green	Large	50.0	80.0	23.3	3.0	57.6	7,895	60.2	1606
CDC Redberry	Red	Small	45.3	76.3	24.0	1.3	39.6	11,467	62.1	1834
CDC Richlea	Green	Medium	46.0	77.5	21.8	2.3	47.7	9,528	60.8	1833
CDC Robin	Red	Small	47.5	75.5	23.5	1.8	25.7	17,675	63.5	1936
CDC Rouleau	Red	Small	47.0	76.5	24.8	3.3	34.9	13,003	61.9	1619
CDC Sedley	Green	Large	46.3	80.0	23.3	2.8	63.6	7,145	60.7	1163
CDC Sovereign	Green	Large	49.8	79.0	25.0	2.5	58.4	7,777	61.1	1394
CDC Viceroy	Green	Small	48.3	76.3	27.3	2.5	30.2	15,051	62.9	1935
Crimson	Red	Small	45.8	75.5	19.5	4.5	32.7	13,877	62.5	2198
CDC Grandora	Green	Large	48.5	80.0	24.8	4.0	61.6	7,373	59.4	1173
LC01602062T	Red	Small	45.0	73.5	16.8	7.8	35.2	12,932	61.1	460
LC860616L	Green	Large	47.5	79.8	21.8	3.8	65.8	6,914	58.9	1671
Laird	Green	Large	52.0	82.3	26.0	2.8	61.7	7,365	59.4	1279
Merrit	Green	Medium	44.3	76.5	22.5	5.0	53.7	8,481	58.8	1464
Pardina	Brown	Small	43.8	73.8	20.0	7.8	31.9	14,290	62.9	763
Pennell	Green	Large	48.0	78.3	21.3	2.8	59.6	7,616	59.2	1582
MEAN			47.4	77.4	22.7	3.4	45.6	10935	61.2	1548
C.V.%			1.8	1.2	11.9	21.8	3.7	3.2	0.6	17.8
LSD.05			1.2	1.4	3.8	1.0	2.4	148	0.5	388
LSD.01			1.6	1.8	5.1	1.4	3.2	197	0.7	517
#REPS			4	4	4	4	4	4	4	4

Planting Date = May 8 ; Swath Date = July 28 ; Harvest Date = August 4 ; Previous Crop = Spring Wheat

** The variety Pardina and LC01602062T were especially infected with anthracnose;

* Crimson and CDC Blaze also had some random infections.

Table 48. Western Regional Lentil Yield Trial – 0698 – No-Till at Hettinger, ND - 2006.
Data from Eric Eriksmoen, North Dakota State University.

Cultivar	Days to Bloom	Duration of Bloom days	Days to Mature	Plant Height cm	1000 Seed wt. grams	Seed Yield lbs/Ac
Pennell	64	18	95	27	51	130
LC860359L	66	14	99	33	50	73
LC860616L	62	19	97	28	50	156
LC99600747L	64	16	99	29	47	71
LC01600724L	65	16	97	27	45	62
LC02600793L	63	17	98	30	51	95
Merrit	59	21	97	26	55	155
CDC Richlea	62	19	97	25	46	262
LC01602300R	62	19	97	32	41	281
LC02600193R	60	21	96	27	45	287
Eston	62	19	95	25	32	186
LC01602273E	60	20	95	23	35	448
LC01602307E	62	19	95	26	39	487
LC03601590E	61	20	95	27	35	357
Pardina	60	20	94	24	34	312
LC02601144P	59	21	95	23	33	291
Crimson	60	21	94	23	33	300
LC01602062T	60	20	94	24	37	221
LC02601276T	64	16	96	29	25	277
LC03600482T	61	19	94	21	28	101
Trial Mean	62	19	96	26	41	227
C.V. %	2.0	6.6	0.9	10.5	6.8	19.8
LSD .05	2	2	1	5	5	75
LSD .01	3	3	2	6	6	100

Planting Date: April 11, 2006

Harvest Date: August 2, 2006

Previous Crop: durum

Note: Very poor stand. Possible Spartan Herb. injury

Table 49. Western Regional Lentil Variety Trial, North Central Research Extension Center at Minot, ND - 2006.
Data from Mark Halvorson, North Dakota State University.

Variety	Days		Mature	Disease	Seed Weight	Test Weight	Seed Yield				
	to Flower	Plant Height					2004	2005	2006	2	3
	DAP	in					DAP ¹	0-9 ²	g/1000	lb/bu	-----lb/A-----
Pennell (LC460197L)	42	13	82	3.5	72.3	56.6	--	--	1801	--	--
LC860359L	46	15	83	4.3	66.9	56.4	1719	2054	1853	1953	1875
LC860616L	41	13	82	2.5	75.5	55.0	1320	1779	1508	1644	1536
LC99600747L	42	15	82	4.5	69.9	55.0	--	2064	1728	1896	--
LC01600724L	45	12	82	6.3	68.9	57.7	--	--	1574	--	--
LC02600793L	41	13	82	1.8	77.3	57.4	--	--	1375	--	--
Merrit (LC460266B)	40	12	82	1.3	65.4	57.8	--	--	1362	--	--
Richlea (LC940001)	45	12	82	2.3	55.0	58.8	--	--	1865	--	--
LC01602300R	43	12	81	1.5	51.8	59.8	--	--	2073	--	--
LC02600193R	44	12	82	5.3	54.9	58.0	--	--	1536	--	--
Easton (RS000001)	42	12	81	1.0	35.9	61.5	--	--	1435	--	--
LC01602273E	45	13	81	3.5	37.7	60.2	--	--	1598	--	--
LC01602307E	46	12	82	2.3	46.6	60.5	1764	2451	1848	2150	2021
LC03601590E	46	12	81	3.0	39.6	60.1	--	--	2030	--	--
Pardina (LC920001)	42	10	81	5.3	42.8	61.4	--	--	1024	--	--
LC02601144P	42	11	83	0.5	41.5	60.8	--	--	1377	--	--
Crimson (LC800024)	44	11	81	6.0	36.5	61.6	--	--	1375	--	--
LC01602062T	42	10	82	1.3	46.4	57.8	948	1488	1249	1368	1228
LC02601276T	43	13	82	1.8	37.6	61.1	--	--	1321	--	--
LC03600482T	42	12	83	0.5	33.4	54.5	--	--	923	--	--
LSD 5%	2	2	1	2.4	2.8	0.6	435	413	360	--	--
C.V.%	2.6	9.3	0.8	58.7	2.5	0.8	27.5	16.1	16.5	--	--
Mean	43	12	82	2.9	52.8	58.6	1093	1814	1543	--	--

¹DAP=Days after planting

²Disease score based on scale 0-9 (0 = no disease, 9 = high disease incidence)

Table 50. Western Regional Lentil Yield Trial, Williston Research Extension Center - 2006.
Data from Neil Riveland, North Dakota State University.

Cultivar	Days to Bloom	Canopy Height		Test Weight lbs/b	1000 KWT gms	Seeds/ pound	Seed Yield lbs/acre	Seed Yield bus/acre
		cms	inches					
Pennell	47.5	27.8	10.9	57.9	60.9	7452	442.1	7.37
LC860359L	52.3	27.0	10.6	60.1	59.7	7611	448.1	7.47
LC860616L	46.0	27.0	10.6	58.1	65.6	6928	454.7	7.58
LC99600747L	46.3	32.5	12.8	58.6	60.7	7482	444.0	7.40
LC01600724L	49.3	26.3	10.3	58.2	55.8	8133	422.1	7.03
LC02600793L	46.0	27.5	10.8	58.6	67.2	6760	510.4	8.51
Merrit	43.0	27.0	10.6	58.5	57.6	7894	525.4	8.76
Richlea	47.5	27.0	10.6	59.5	46.7	9732	567.2	9.45
LC01602300R	47.8	25.5	10.0	60.7	45.8	9919	658.6	10.98
LC02600193R	47.5	24.8	9.7	61.1	46.0	9873	541.5	9.03
Eston	46.8	22.0	8.7	62.9	31.0	14659	494.2	8.24
LC01602273E	48.5	22.3	8.8	62.3	32.0	14170	394.0	6.57
LC01602307E	50.0	26.8	10.5	61.9	41.6	10920	498.9	8.32
LC03601590E	49.5	21.3	8.4	61.9	34.3	13246	363.7	6.06
Pardina	46.3	21.0	8.3	63.8	38.7	11738	333.4	5.56
LC02601144P	46.3	25.3	9.9	63.3	37.5	12103	437.2	7.29
Crimson	49.0	21.8	8.6	62.6	32.0	14172	398.2	6.64
LC01602062T	45.0	22.0	8.7	63.1	43.3	10494	476.7	7.95
LC02601276T	48.5	27.0	10.6	64.6	33.2	13667	396.2	6.60
LC03600482T	47.5	25.0	9.8	63.0	30.0	15124	304.5	5.07
Morton	55.3	24.3	9.5	63.6	31.0	14692	388.7	6.48
Plato	50.8	28.3	11.1	59.1	56.9	7986	580.8	9.68
HIGH MEAN	55.3	32.5	12.8	64.6	67.2	15124	658.6	10.98
LOW MEAN	43.0	21.0	8.3	57.9	30.0	6760	304.5	5.07
EXP MEAN	48.0	25.4	10.0	61.0	45.8	10671	458.2	7.64
C.V. %	1.9	9.1	9.1	.7	2.4	3	18.2	18.16
LSD 5%	1.3	3.3	1.3	.9	2.3	605	117.5	1.96
LSD 1%	1.7	4.4	1.7	1.3	3.1	824	156.2	2.60
# OF REPS	4	4	4	2	2		4	4
F-TRT	31.8	6.0	6.0	48.9	67.0	200	4.22	4.16

Location of the WREC: Latitude 48 8'; Longitude 103 44'W; Elevation 2105 ft.

Planted: May 6 on Fallow. Applied Fertilizer in lbs/a: 0N:0P2O5:0K:

Soil Test to two feet in lbs/a:93N:21P:300K: 2.1 OM pH-5.3

Soil Type: Williams-Bowbells Loam

Harvested: July 25 and August 3 Harvested Area: 64 ft2

Winter Lentil Trials

Ten winter lentil entries in the Western Regional Yield Trial were evaluated at 5 locations across four states. The entries comprised two checks, 'Morton', WA8649041, and eight breeding lines. Data were collected from three locations (Tables 55 and 56). Information regarding experimental design, location and specific observations for some of the locations are included below. Morton produced an average yield of 1189 lb/a, while two breeding lines produced average yields of 1388 lb/a (LC9979062) and 1346 lb/a (LC03600218T).

Table 51. Summary of Locations Participating in the 2006 Winter Lentil Western Regional Yield Trial.

Location	Contact	Conditions	Nurseries		
			Seed Sent	Data Returned	Data Lost
<i>Montana</i>					
Kalispell	Duane Johnson, Louise Strang	Dryland	✓	✓	
Moccasin	Chengci Chen, Karnes Neill	Dryland	✓	✓	
<i>North Dakota</i>					
Hettinger	Eric Eriksmoen	Dryland	✓	✓	
<i>South Dakota</i>					
Hayes	John Rickertsen	Dryland	✓		✓
Grand Totals			4	3	1

Table 52. Location Yield Summary (lb/a) for Western Regional Winter Lentil Trials.

Location	WA8649041	Morton	LC9440070r	LC9978057	LC9979062	LC9979065	LC02600449T	LC03600218T	LC03600232T	LC03600295T
Kalispell, MT	663	324	224	992	1048	751	1173	338	389	832
Moccasin, MT	1526	2103	1819	1797	2061	2068	1432	2329	1635	1497
Hettinger, ND	341	1112	893	1128	1055	1039	1226	1372	1007	1161
Grand Mean	843	1189	979	1306	1388	1286	1277	1346	1010	1163

Grand mean taken from locations with a complete set of data.

Table 53. Post Harvest Quality Evaluations of Winter Lentil Lines in the Western Regional Lentil Trials - 2006

Cultivar	Weight 100 Seeds g	Water Uptake %	Hard Seed %	Conductivity us/g	Post Soak Seed Color	Post Soak Bleach %	Cooking Time minutes	Post Cook Seed Color	Post Cook Broth Color	Seed Coat Seperates	Cooked To Mush
MORTON	2.9	94.98	5.6	33.05	G	0	23.33	2	4	N	N
WA8649041	2.73	109.38	2	33.03	G	0	23.33	3	6	Y	N
LC9440070r	4.83	126.9	0	53.79	G	0	23.33	2	5	N	N
LC9978057T	3.07	88	11	26.67	G	0	26.67	2	4	Y	N
LC02601276T	3.2	47.77	22.33	25.71	G	0	27.33	2	4	Y	N
LC03600190T	3.47	78.49	12.33	28.38	G	0	27.33	2	5	Y	N
LC03600232T	3.27	43.5	24.33	15.92	G	0	27.33	2	4	Y	N
LC03600245T	3.03	93.13	8	33.18	G	0	26.00	3	6	Y	Y

Seed used for post harvest quality evaluations was grown at Pullman, WA in 2006.

Conductivity is expressed as microsiemens per gram of seed.

Post Seed Soaking Color Evaluation: G = Good; F = Fair; P = Poor.

Cooking time determined by removing a small sub-sample at two minute intervals and mashed with a fork until deemed cooked.

Post Cooking Seed Color is rated as: 1 = Good; 2 = Fair; 3 = poor.

Post Cooking Broth Color is rated as: 4 = dark; 5 = Light; 6 = Muddy.

Seed Coat Separates From Cotyledon (Sloughs) During Cooking: Y = Yes; N = No.

Seed Cooks To Mush (Looses Rigidity And Individual Seed Identity): Y = Yes; N = No.

Cooking tests conducted on each of three seed lots soaked for 18 hours.

All data in the above table is the average of three 100 seed sub-samples.

Table 54. Western Regional Winter Lentil Yield Trial at Kalispell, MT – 2006.
Data from Duane Johnson and Louise Strang.

Variety	Fall Stand pl/sqft	Spring Stand pl/sqft	Survival %	Flower date	Height in	Maturity date	Yield lbs/a	Seed Size #/lb
WA8649041	17.4	12.7	73		17.5	7/19	662.8	16676
MORTON	15.3	8.8	58	5/31	14.5	7/16	323.5	15027
LC9440070r	16.5	5.0	30	6/1	12.5	7/19	223.6	9201
LC9978057T	17.9	12.0	67	5/29	17.3	7/15	992.1	15935
LC9979062T	15.9	10.7	67	5/30	17.0	7/16	1048.1	14905
LC9979065T	14.7	10.4	71		13.8	7/19	750.8	15842
LC02600449T	13.8	0.3	2				1173.3	18160
LC03600218T	15.1	1.0	7	5/30	14.0	7/16	337.9	14419
LC03600232T	13.7	5.5	40		15.0	7/18	389.2	13529
LC03600295T	15.8	0.2	1	5/31			832.0	16214
mean	15.6	6.7	42		15.2		673.4	15021
Pr>F	0.0154	< 0.0001	< 0.0001		0.0135		0.0033	< 0.0001
LSD(0.05)	1.8	2.0	16		2.1		275.9	1150
CV(%mean)	10.8	28.7	35.8		12.8		41.9	7.4

Table 55. Western Regional Winter Lentil Trial – Dryland winter lentil agronomy results. Exp. 840706, Central Ag Research Center, Moccasin, MT - 2006. Data from Chengqi Chen and Karnes Neill.

Entry	Biomass (Forage)-1		----- Grain Harest -----			
	Height (in)	Dry Matter (lbs/acre)	Height (in)	Yield (lbs/acre)	Test Weight (lbs/bu)	Moisture (%)
WA8649041	37.3 ^a	2,851 ^a	42.5 ^a	1,526	64.5	9.7 ^a
LC9976079	33.0 ^a	1,754	37.3	1,666	63.7	9.8 ^a
LC9978057			33.0	1,797	65.5	9.5
LC9978094	35.5 ^a	2,412 ^a	45.0 ^a	1,608	65.4	10.2 ^a
Morton	27.8	2,015	36.0	2,103 ^a	65.2	9.4
LC9979062	31.3 ^a	2,197	34.3	2,061 ^a	65.0	9.5 ^a
LC9979065	28.8	2,235	33.8	2,068 ^a	65.3	9.1
LC9979120	28.0	1,616	33.5	1,697	65.1	9.3
Toni	37.0 ^a	2,425 ^a	42.8 ^a	1,406	64.7	9.6 ^a
LC9440070R	29.5	2,113	35.3	1,819	60.3	9.5
LC02600449T			35.8	1,432	63.9	9.0
LC03600218T			30.0	2,329 ^a	64.5	9.1
LC03600232T	33.5 ^a	2,074	39.5 ^a	1,635	66.5 ^a	8.9
LC03600295T			34.8	1,497	64.8	8.8
LC9977116			29.8	1,984 ^a	65.2	9.0
LC9979016	29.5	1,706	41.3 ^a	1,609	65.2	10.1 ^a
LC9977019			33.3	2,041 ^a	64.0	9.3
WA8649090			32.3	1,885 ^a	65.8	8.9
Means (n = 44)	31.9	2,127 (n = 72)	36.1	1,787	64.7	9.4
LSD0.05 (by t)	6.5	528	7.2	506	0.5	0.6
C.V. % (s/means)	14.07	17.16	14.1	20	0.6	4.7
F-Value (10,29 df)	2.49	3.92 (17,51df)	3.04	2.22	48.39	3.31
p-Value (by F)	0.027	0.002	0.001	0.015	0.000	0.001
MSE (29 df)	20.15	1.3E+05 (51 df)	25.73	1.3E+05	0.1383	0.197

a - Denotes values equal highest value (in bold) based on LSD(0.05).

-1 - Only those selections with visible biomass (green manure) potential were sampled.

Table 56. 2006 Spring Seeded Winter Lentil Variety Trial – Continuously Cropped - No-till at Hettinger, North Dakota
Data from Eric Eriksmoen, North Dakota State University.

Variety	Days to Bloom	Duration of Bloom days	Days to Mature	Plant Ht. inches	Lodging 0-9*	1000 Seed wt. grams	Test Wt. lbs/bu	Seed Yield lbs/Ac
<i>Winter Types</i>								
Morton	69	14	92	10	1.8	29	63.2	1112
WA8649041	74	9	98	12	1.2	23	--	341
LC9440070R	66	17	93	11	2.5	42	58.6	893
LC9978057T	64	18	90	11	6.2	33	62.6	1128
LC9979062T	68	15	92	12	1.0	30	61.8	1055
LC9979065T	70	13	94	10	1.0	28	62.2	1039
LC2600449T	64	17	91	11	4.2	38	59.6	1226
LC03600218T	62	17	88	9	5.0	38	62.0	1372
LC03600232T	70	13	94	12	1.0	31	61.6	1007
LC03600295T	62	16	87	10	2.2	42	61.8	1161
<i>Spring Types</i>								
CDC Blaze	59	20	84	10	2.0	31	62.2	1875
CDC Milestone	58	20	85	11	2.2	31	60.4	2102
Laird	64	16	91	14	2.2	49	58.0	1404
CDC Richlea	59	19	87	11	3.5	43	59.0	2135
CDC Sovereign	64	15	90	13	1.5	53	58.8	1599
Pardina	57	20	86	10	6.0	32	61.8	2029
Trial Mean	64	16	90	11	2.7	36	60.9	1342
C.V. %	1.4	6.9	1.8	10.1	28.2	3.5	1.1	10.5
LSD .05	1	2	2	2	1.1	2	0.9	201
LSD .01	2	2	3	2	1.5	2	1.2	268

Chickpea Trials

Ten chickpea entries in the Western Regional Chickpea Yield Trial were evaluated at 20 locations across nine states. The entries comprised three checks, 'Dwelley', 'Sierra', and 'Dylan' and seven breeding lines including four Café and three Spanish white types. The trials were conducted under dryland or irrigated conditions depending on the location. Information regarding experimental design, location and specific observations for some of the locations are included below. The three checks, Dwelley, Sierra and Dylan, produced average seed yields of 823, 987 and 1005 lb/a, respectively. The highest yielding line in the trial was CA0090B347C (1191 lb/a), a café type, and 'Troy' (CA0090I875W), a Spanish white type recently release, produced average seed yield of 718 lb/a.

Table 57. Summary of Locations Participating in the 2006 Chickpea Western Regional Yield Trial

Location	Contact	Conditions	Nurseries		
			Seed Sent	Data Returned	Data Lost
Colorado					
Yellow Jacket	Mark Stack	Dryland	✓		✓
Idaho					
Moscow	Stephen Guy	Dryland	✓	✓	
Tammany	Larry Smith	Dryland	✓		✓
Montana					
Moccasin	Chengci Chen, Louise Strang	Dryland	✓	✓	
Nebraska					
Box Butte	David Baltensperger, Glen Frickel	Dryland	✓	✓	
Box Butte	David Baltensperger, Glen Frickel	Irrigated	✓	✓	
Scottsbluff	David Baltensperger, Glen Frickel	Dryland	✓	✓	
Scottsbluff	David Baltensperger, Glen Frickel	Irrigated	✓	✓	
Sidney	David Baltensperger, Glen Frickel	Dryland	✓	✓	
Sidney	David Baltensperger, Glen Frickel	Irrigated	✓	✓	
New Mexico					
Farmington	Mick O'Neill	Dryland	✓		✓
North Dakota					
Carrington	Steve Zwinger, Blaine Schatz	Dryland	✓	✓	
Hettinger	Eric Eriksmoen	Dryland	✓	✓	
Minot	Mark Halvorson	Dryland	✓	✓	
Williston	Neil Riveland	Dryland	✓	✓	
Oregon					
Milton Freewater	Thomas Darnell	Dryland	✓		✓
Madras	Brian Duggan	Dryland	✓		✓
South Dakota					
Hayes	John Rickertsen	Dryland	✓	✓	
Wall	John Richertsen	Dryland	✓	✓	
Wyoming					
Torrington	Jack Cecil	Dryland	✓		✓
Grand Totals			20	14	6

Table 58. Location Yield Summary (lb/a) for Western Regional Chickpea Trials.

Location	Troy						Dylan	Dwelley	Sierra	
	CA9783163C	CA9990B1579C	CA0090B347C	CA0190B839C	CA9890233W	CA0090I875W				CA0290B730C
Moscow, ID	1230		1830		1270	1200	1290	1620	1410	1530
Moccasin, MT	962	895	1174	775	860	765	782	1113	730	778
Box Butte, NE (Dry)	177	237	255	128	224	132		243	116	193
Box Butte, NE (Irrig.)	1314	1342	1603	753	1359	1104		1253	1239	1552
Scottsbluff, NE (Dry)	142	158	375	110	86	117		288	122	333
Scottsbluff, NE (Irrig.)	1905	2082	2044	1659	2183	1905		2071	1955	2101
Sidney, NE (Dry)	465	664	754	227	522	393		322	469	612
Sidney, NE (Irrig.)	37	349	780	17	123	39		16	63	192
Carrington, ND	1283	1899	1624	1467	1368	1095	1234	1976	1219	1691
Hettinger, ND	578	622	956	500	500	478	967	556	700	711
Minot, ND	469	608	1056	313	488	334	919	439	428	673
Williston, ND	1031	1077	1143	1074	943	920	1123	941	1039	1084
Hayes, SD	592	767	871	531	610	680		828	583	845
Wall, SD	1237	1211	1734	1263	697	784		1385	1150	1411
Grand Mean	865	1020	1191	826	832	718	1005	1005	823	987

Grand mean taken from locations with a complete set of data.

Table 59. Post Harvest Quality Evaluations of Kabuli Chickpea Lines in the Western Regional Chickpea Trials – 2006.

Cultivar	Weight 100 Seeds ..g..	Water Uptake ..%..	Hard Seed ..%..	Conductivity ..us/g..	Post Soak Seed Color	Post Soak Bleach ..%..	Cooking Time ..minutes..	Post Cook Seed Color	Post Cook Broth Color	Seed Coat Separates	Cooked To Mush
Dwelley	51.17	100.6	0.0	34.40	G	0.0	17.3	1	4	N	N
Dylan	53.07	119.6	0.0	19.66	G	0.0	18.0	1	4	N	N
Sierra	48.97	109.6	0.0	31.04	G	0.0	19.3	1	4	N	N
CA9783163C	54.93	85.5	0.0	19.05	G	0.0	16.0	1	4	N	N
CA9890233W	54.60	118.9	0.0	20.82	G	0.0	16.7	1	4	N	N
CA9990B1579C	49.50	114.0	0.0	27.68	G	0.0	19.3	1	4	N	N
CA9990I875W	59.23	95.2	0.0	24.70	G	0.0	15.3	1	4	N	N
CA0090B347C	42.10	101.6	0.0	24.07	G	0.0	16.7	1	4	Y	N
CA0190B839C	54.60	114.5	0.0	32.97	G	0.0	18.0	1	4	Y	N
CA0290B730C	49.10	107.9	0.0	39.04	G	0.0	16.7	1	4	N	N

Seed used for post harvest quality evaluations was grown at Pullman, WA in 2006.

Conductivity is expressed as microsiemens per gram of seed.

Post Seed Soaking Color Evaluation: G = Good; F = Fair; P = Poor.

Cooking time determined by removing a small sub-sample at two minute intervals and mashed with a fork until deemed cooked.

Post Cooking Seed Color is rated as: 1 = Good; 2 = Fair; 3 = poor.

Post Cooking Broth Color is rated as: 4 = dark; 5 = Light; 6 = Muddy.

Seed Coat Separates From Cotyledon (Sloughs) During Cooking: Y = Yes; N = No.

Seed Cooks To Mush (Looses Rigidity And Individual Seed Identity): Y = Yes; N = No.

Cooking tests conducted on each of three seed lots soaked for 20 hours.

All data in the above table is the average of three 100 seed sub-samples.

Table 60. Chickpea variety performance results at Moscow, ID - 2006.
Data from Stephen Guy, University of Idaho.

Variety or Selection	Seed Yield lb/acre	Seed Weight g/100	Plant Height inches
Dwelley	1410	47.9	17
Dylan	1620	47.7	17
Myles	1700	16.9	17
Sierra	1530	46.1	17
Spanish White	970	53.2	14
CA9783163C	1230	45.4	18
CA0090B347C	1830	38.0	17
CA9890233W	1270	44.1	16
CA9990I875W	1200	46.7	18
CA0290B730C	1290	44.0	15
Average	1410	43.0	16
LSD (0.10)	191	3.1	1
CV (%)	11	5.9	7

Table 61. Seed yield averages for chickpea varieties tested for three years in northern Idaho. Data from Stephen Guy, University of Idaho.

Variety or Selection	2004	2005	2006	Average
	-----lb/acre-----			
Dwelley	2130	220	1410	1253
Dylan	3010	530	1620	1720
Myles	2540	800	1700	1680
Sierra	2460	480	1530	1490
Spanish White	2100	640	970	1237
CA 9890233W	2860	360	1270	1497
CA99901875W	2470	330	1200	1333
Average	2510	480	1390	1460
LSD (0.10)	410	70	191	-

Table 62. Western Regional Chickpea Trial - Dry-land chickpea agronomic summary. Exp. 890706, Central Ag Research Center, Moccasin, MT - 2006. Data from Chengci Chen and Karnes Neill.

Selection	Canopy Ht cm	Yield lbs/ac	Moisture %	Seed Weights			Sieve Size			
				Test lbs/bu	Kernel g/1,000	>10	9	8	>8	
Dwellely	45.8	730	7.93	56.70	435.1 ^a	7.9 ^a	28.8 ^a	51.9	88.6 ^a	
Dylan	40.3	1,113 ^a	7.85	54.78	425.5 ^a	4.0 ^a	24.0	58.1	86.0 ^a	
Sierra	43.5	778	8.15 ^a	57.10	408.4 ^a	1.8 ^a	20.6	63.8	86.2 ^a	
CA9783163C	44.0	962	8.10	55.48	414.0 ^a	0.7	21.6	63.5	85.7 ^a	
CA9990B1579C	46.3	895	8.00	56.83	408.5 ^a	4.5 ^a	21.8	60.5	86.8 ^a	
CA0090B347C	46.0	1,174 ^a	8.43 ^a	58.50 ^a	400.5	3.3 ^a	10.6	74.5 ^a	88.3 ^a	
CA0190B839C	50.0 ^a	775	7.98	56.50	415.5 ^a	5.2 ^a	24.9	54.4	84.5 ^a	
CA0290B730C	44.5	782	7.70	55.35	418.7 ^a	4.1 ^a	36.0 ^a	45.4	85.5 ^a	
CA9890233W	43.5	860	7.90	54.55	405.9 ^a	4.5 ^a	26.0 ^a	48.8	79.2	
CA9990I875W	41.8	765	7.98	54.23	421.5 ^a	6.3 ^a	30.9 ^a	46.6	83.9 ^a	
Mean (n = 48)	44.6	883	8.00	56.00	415.3	4.2	24.5	56.7	85.5	
LSD (0.05 by t)	3.5	161	0.29	0.90	30.3	6.4	11.0	10.4	8.7	
CV% (s/means)	5.415	12.52	2.46	1.105	5.0	104	30.8	12.6	7.0	
F-Value (11,33 df)	4.96	7.81	3.93	18.96	0.97 ⁿ	0.89 ⁿ	3.27	6.48	0.77 ⁿ	
P-Value (by F)	0.001	0.000	0.003	0.000	0.4855	0.55	0.0081	0.00	0.64	
MSE (27 df)	5.819	12240	0.039	0.3828	435.7	19.2	56.937	51.37	36.29	

^a - Denotes values equal to highest value (in bold) based on LSD(0.05).

ⁿ - Denotes not statistically significant at 0.05 level.

Table 63. Western Regional Chickpea Trial grown under dryland conditions at three NE locations during 2006. Data from David Baltensperger and Glen Frickel, University of Nebraska.

ENTRY	Yield lbs/A	Vigor (1-5)†	Seeds/lb #/lb	100 SeedWeight gr‡	Ascochyta Blight (1-5)§
HB 14	466	1.8	1157	39.5	2.5
HB 19	466	2.1	1016	45.1	2.1
CA0090B347C	462	2.0	1278	35.8	2.0
PI 17256	441	3.5	1732	27.3	1.5
CA9783152C	380	2.0	1172	39.1	2.5
CA9990B1579C	353	2.3	1199	38.1	2.5
CA9990I604C	284	2.3	1032	44.8	2.5
CA9890233W	277	2.4	1259	36.3	2.0
CA9783163C	261	2.4	1080	42.8	2.0
CA188359	236	2.3	1155	39.5	2.5
CA9990I875W	214	2.8	1158	39.5	2.0
CA0190B839C	155	2.2	1212	37.6	3.0
GRAND MEAN	333	2.3	1203	38.9	2.3
LSD 5%	129	0.4	124	3.4	0.4
CV %	34.8	1.5	10.2	6.4	1.0

† 1= Excellent; 3= Intermediate; 5= Very Poor

‡ 100 seed weight

§ 1= Resistant: No visible disease symptoms; 3= Intermediate: Approximately 10% of the leaf area is covered by small lesions that are beginning to coalesce; 5= Susceptible: More than 50% of the leaf surface area is covered with large coalescing lesions

Table 64. Western Regional Chickpea Trial grown under irrigated conditions at three NE locations during 2006. Data from David Baltensperger and Glen Frickel, University of Nebraska.

ENTRY	Yield lbs/A	Vigor (1-5)†	Seeds/lb #/lb	100 SeedWeight gr‡	Ascochyta Blight (1-5)§
HB 19	1563	1.8	982	48.1	2.7
HB 14	1532	1.7	1187	40.2	3.1
CA0090B347C	1475	2.3	1138	40.0	2.3
CA9783152C	1282	2.1	1132	42.1	2.9
CA9990B1579C	1257	2.4	1042	44.1	2.6
CA9890233W	1222	2.3	1027	45.9	2.7
PI 17256	1213	3.0	1431	33.0	1.5
CA9990I604C	1113	2.5	862	53.0	3.3
CA188359	1086	2.5	1031	45.2	3.0
CA9783163C	1085	2.6	937	48.7	2.7
CA9990I875W	1016	2.7	1141	42.0	2.6
CA0190B839C	810	2.5	945	48.2	3.1
GRAND MEAN	1221	2.4	1085	43.7	2.7
LSD 5%	486	0.3	221	6.1	0.6
CV %	16.0	1.3	7.3	6.1	1.3

† 1= Excellent; 3= Intermediate; 5= Very Poor

‡ 100 seed weight

§ 1= Resistant: No visible disease symptoms; 3= Intermediate: Approximately 10% of the leaf area is covered by small lesions that are beginning to coalesce; 5= Susceptible: More than 50% of the leaf surface area is covered with large coalescing lesions

Table 65. NE1-06-2. Western Regional Chickpea Trial grown under dryland conditions at the HPAL, Sidney NE, during 2006. Data from David Baltensperger and Glen Frickel, University of Nebraska.

ENTRY	Yield lbs/A	Vigor (1-5)†	Seeds/lb #/lb	Seed Weight gr‡	Ascochyta Blight (1-5)§
PI 17256	835	3.4	1398	32.5	1.5
HB 19	775	2.6	945	48.1	2.6
CA0090B347C	754	2.4	1256	36.2	2.0
CA9990B1579C	664	2.6	1129	40.4	2.4
CA9783152C	612	2.0	1112	40.9	2.5
HB 14	575	2.0	1092	41.6	3.4
CA9890233W	522	3.1	1199	38.1	2.4
CA188359	469	2.8	1104	41.2	3.0
CA9783163C	465	3.3	1068	42.6	2.5
CA9990I875W	393	3.1	1085	42.3	2.5
CA9990I604C	322	2.9	1078	42.1	3.3
CA0190B839C	227	2.4	1180	38.5	3.8
GRAND MEAN	551	2.7	1137	40.4	2.6
LSD 5 %	210	0.8	106	3.8	0.6
CV %	18.8	1.2	4.6	4.7	0.9

† 1= Excellent; 3= Intermediate; 5= Very Poor

‡ 100 seed weight

§ 1= Resistant: No visible disease symptoms; 3= Intermediate: Approximately 10% of the leaf area is covered by small lesions that are beginning to coalesce; 5= Susceptible: More than 50% of the leaf surface area is covered with large coalescing lesions

Table 66. NE1-06-1. Western Regional Chickpea Regional Trial grown under irrigated conditions at the HPAL, Sidney, NE, during 2006. Data from David Baltensperger and Glen Frickel, University of Nebraska.

ENTRY	Yield lbs/A	Vigor (1-5)†	Seeds/lb #/lb	100 SeedWeight gr‡	Ascochyta Blight (1-5)§
PI 17256	1300	2.4	1238.5	36.6	1.5
CA0090B347C	780	1.9	1186.9	38.2	2.4
CA9990B1579C	349	1.8	1172.1	39.0	2.6
CA9783152C	192	1.8	1491.7	30.9	3.4
CA9890233W	123	1.9	1318.8	34.5	3.3
HB 19	109	1.8	1270.7	35.7	3.4
CA188359	63	2.0	1274.1	35.6	3.9
HB 14	62	1.5	1565.6	29.3	4.1
CA9990I875W	39	2.4	1532.4	29.6	3.4
CA9783163C	37	2.1	.	.	3.4
CA0190B839C	17	1.8	.	.	4.3
CA9990I604C	16	2.5	.	.	4.9
GRAND MEAN	257	2.0	1339.0	34.4	3.4
LSD 5 %	190	0.4	228.8	5.4	0.8
CV %	36.4	0.6	8.1	7.4	1.1

† 1= Excellent; 3= Intermediate; 5= Very Poor

‡ 100 seed weight

§ 1= Resistant: No visible disease symptoms; 3= Intermediate: Approximately 10% of the leaf area is covered by small lesions that are beginning to coalesce; 5= Susceptible: More than 50% of the leaf surface area is covered with large coalescing lesions

Table 67. NE2-06-2. Western Regional Chickpea Trial grown under dryland conditions at Box Butte, NE, during 2006. Data from David Baltensperger and Glen Frickel, University of Nebraska.

ENTRY	Yield lbs/A	Vigor (1-5)†	Seeds/lb #	100 SeedWeight gr‡	Ascochyta Blight (1-5)§
PI 17256	297	3.1	1828	26.1	1.6
HB 19	281	1.8	1161	39.1	2.3
HB 14	281	1.5	1284	35.4	2.3
CA0090B347C	255	1.6	1420	32.0	2.0
CA9990I604C	243	1.6	1164	39.1	2.4
CA9990B1579C	237	1.9	1308	34.7	2.8
CA9890233W	224	1.8	1319	34.5	2.1
CA9783152C	193	1.8	1335	34.0	3.0
CA9783163C	177	1.8	1258	36.1	2.1
CA9990I875W	132	2.0	1252	36.3	2.0
CA0190B839C	128	2.0	1307	34.7	3.3
CA188359	116	2.1	1278	35.5	2.8
GRAND MEAN	214	1.9	1326	34.8	2.4
LSD 5 %	108	0.5	210	3.4	0.4
CV %	24.8	0.8	7.8	4.8	0.6

† 1= Excellent; 3= Intermediate; 5= Very Poor

‡ 100 seed weight

§ 1= Resistant: No visible disease symptoms; 3= Intermediate: Approximately 10% of the leaf area is covered by small lesions that are beginning to coalesce; 5= Susceptible: More than 50% of the leaf surface area is covered with large coalescing lesions

Table 68. NE2-06-1. Western Regional Chickpea Trial grown under irrigated conditions at Box Butte, NE, during 2006. Data from David Baltensperger and Glen Frickel, University of Nebraska.

ENTRY	Yield lbs/A	Vigor (1-5)†	Seeds/lb #	100 SeedWeight gr‡	Ascochyta Blight (1-5)§
HB 19	1858	2.3	810	56.2	2.0
HB 14	1606	2.0	950	47.8	2.3
CA0090B347C	1603	3.0	1050	43.2	1.9
CA9783152C	1552	2.1	905	50.2	2.4
PI 17256	1405	3.4	1190	38.2	1.5
CA9890233W	1359	3.0	857	53.1	2.3
CA9990B1579C	1342	2.9	920	49.3	2.4
CA9783163C	1314	3.0	924	49.2	2.0
CA9990I604C	1253	2.8	869	52.8	2.0
CA188359	1239	2.9	913	49.7	2.8
CA9990I875W	1104	3.1	894	50.8	1.8
CA0190B839C	753	3.0	982	46.3	2.5
GRAND MEAN	1366	2.8	939	48.9	2.1
LSD 5 %	304	0.7	74	4.1	0.3
CV %	11.0	1.1	3.9	4.1	0.6

† 1= Excellent; 3= Intermediate; 5= Very Poor

‡ 100 seed weight

§ 1= Resistant: No visible disease symptoms; 3= Intermediate: Approximately 10% of the leaf area is covered by small lesions that are beginning to coalesce; 5= Susceptible: More than 50% of the leaf surface area is covered with large coalescing lesions

Table 69. NE3-06-2. Western Regional Chickpea Trial grown under dryland conditions at Scottsbluff, NE, during 2006. Data from David Baltensperger and Glen Frickel, University of Nebraska.

ENTRY	Yield lbs/A	Vigor (1-5)†	Seeds/lb #	100 SeedWeight gr‡	Ascochyta Blight (1-5)§
HB 14	542	1.9	1095	41.7	1.8
CA0090B347C	375	2.0	1159	39.2	2.0
HB 19	342	2.0	943	48.1	1.5
CA9783152C	333	2.3	1070	42.4	1.9
CA9990I604C	288	2.3	854	53.1	1.9
PI 17256	191	4.0	1972	23.4	1.5
CA9990B1579C	158	2.4	1160	39.3	2.3
CA9783163C	142	2.1	913	49.7	1.5
CA188359	122	2.1	1083	41.9	1.8
CA9990I875W	117	3.3	1137	39.9	1.5
CA0190B839C	110	2.1	1148	39.6	1.9
CA9890233W	86	2.4	.	.	1.5
GRAND MEAN	234	2.4	1139	41.7	1.7
LSD 5 %	165	0.7	256	4.5	0.3
CV %	34.7	1.1	10.8	5.2	0.5

† 1= Excellent; 3= Intermediate; 5= Very Poor

‡ 100 seed weight

§ 1= Resistant: No visible disease symptoms; 3= Intermediate: Approximately 10% of the leaf area is covered by small lesions that are beginning to coalesce; 5= Susceptible: More than 50% of the leaf surface area is covered with large coalescing lesions

Table 70. NE3-06-1. Western Regional Chickpea Trial grown under irrigated conditions at the PHREC-Scottsbluff, NE, during 2006. Data from David Baltensperger and Glen Frickel, University of Nebraska.

ENTRY	Yield lbs/A	Vigor (1-5)†	Seeds/lb #	100 SeedWeight gr‡	Ascohyta Blight (1-5)§
HB 14	2928	1.5	1046	43.5	3.0
HB 19	2720	1.5	866	52.4	2.8
CA9890233W	2183	2.1	905	50.3	2.5
CA9783152C	2101	2.5	1000	45.4	2.9
CA9990B1579C	2082	2.5	1035	43.9	2.8
CA9990I604C	2071	2.1	854	53.2	2.9
CA0090B347C	2044	2.0	1176	38.7	2.6
CA188359	1955	2.6	905	50.2	2.5
CA9990I875W	1905	2.5	996	45.6	2.8
CA9783163C	1905	2.6	950	48.2	2.6
CA0190B839C	1659	2.6	909	50.1	2.5
PI 17256	935	3.1	1864	24.4	1.5
GRAND MEAN	2041	2.3	1042	45.5	2.6
LSD 5 %	327	0.6	78	3.6	0.6
CV %	7.9	0.9	3.7	3.9	1.0

† 1= Excellent; 3= Intermediate; 5= Very Poor

‡ 100 seed weight

§ 1= Resistant: No visible disease symptoms; 3= Intermediate: Approximately 10% of the leaf area is covered by small lesions that are beginning to coalesce; 5= Susceptible: More than 50% of the leaf surface area is covered with large coalescing lesions

Table 71. NDSU Carrington Research Extension Center Western Regional Chickpea Nursery - 2006.
Data from Blaine Schatz and Steve Zwinger, North Dakota State University.

Variety	Market Class	Leaf Type	Days to Flower	Plant Ht cm	Disease 0 to 10	Seed Size > 9 mm %	Seed Size > 8 mm %	Seed Size > 7 mm %	100 KWT gms	Seeds / Pound	Test Weight lbs/bu	Seed Yield lbs/ac
CA0090B347C	Café'	Simple	42.3	45	2.7	57	35	7	40.1	1134	62.8	1624
CA0090I875W	White	Compound	44.3	38	0.0	72	14	7	36.5	1249	58.3	1095
CA0190B839C	Café'	Simple	42.7	50	0.3	76	17	5	43.0	1057	61.0	1467
CA0290B730C	Café'	Simple	45.7	46	1.3	75	19	4	42.8	1062	61.3	1234
CA9783163C	Café'	Compound	45.0	38	0.0	75	14	6	41.6	1093	58.7	1283
CA9890233W	White	Compound	44.0	39	0.0	73	16	6	43.8	1058	59.2	1368
CA9990B1579C	Café'	Simple	44.0	45	0.7	82	15	3	46.3	982	61.5	1899
Dwelly	Café'	Simple	46.7	43	1.3	68	23	6	41.9	1100	61.0	1219
Dylan	Café'	Compound	41.3	40	0.0	83	11	3	46.7	972	58.9	1976
Sierra	Café'	Simple	44.0	44	0.3	81	14	3	45.4	1001	61.5	1691
MEAN			44.0	42.7	0.7	73.8	18.0	4.8	1068	429	60.4	1492
C.V.%			1.8	5.2	86.1	8.2	19.1	34.9	8.8	8.2	0.8	13.9
LSD.05			1.4	3.8	1.0	10.6	6.0	3.0	NS	NS	0.9	363
LSD.01			1.9	5.2	1.3	14.7	8.4	NS	NS	NS	1.2	503
#REPS			3	3	3	3	3	3	3	3	3	3

Planting Date = May 22 ; Harvest Date = August 30 ; Previous Crop = Durum

** The seed size data as reported reflect the % of the seed sample remaining on top of the sieves stacked in series.

** Ascochyta disease was present and scored based on combination of incidence and severity; 0 = no disease & 10 heavy pressure.

Table 72. NDSU Carrington Research Extension Center Core Chickpea Trial - 2006.
Data from Blaine Schatz and Steve Zwinger, North Dakota State University.

Variety	Market Type	Leaf Type	Days to Flower	Days to PM	Plant Ht cm	Plant Lodge 0-9	Seed Size > 9 mm %	Seed Size > 8 mm %	Seed Size > 7 mm %	100 KWT gms	Seeds / Pound	Test Weight lbs/bu	Seed Yield lbs/ac
Amit	Small Kabuli	Compound	46.8	78.3	78.3	2.8	1.0	21.1	61.0	26.1	1739	61.8	2825
CDC Frontier	Kabuli	Compound	43.8	78.8	78.8	0.3	29.4	57.1	12.1	34.1	1330	63.0	3491
CDC Xena	Kabuli	Simple	44.3	79.3	79.3	1.0	80.0	18.1	1.5	48.3	940	62.6	2597
Dwelly	Kabuli	Simple	47.3	83.0	83.0	3.8	87.2	11.3	1.1	50.2	905	61.0	2178
Dylan	Kabuli	Compound	41.3	80.0	80.0	0.0	90.6	6.8	1.8	53.8	846	58.6	2905
Myles	Desi	Compound	43.5	76.3	76.3	0.3	0.2	5.2	60.6	18.6	2435	56.8	2656
Sierra	Kabuli	Simple	45.3	80.5	80.5	1.3	89.2	8.5	1.5	50.1	906	60.9	2668
Troy	Kabuli		45.5	82.8	82.8	1.0	88.1	7.4	3.2	49.9	915	58.2	2302
MEAN			44.7	79.8	42.6	1.3	57.5	16.9	18.3	41.1	1262	60.3	2706
C.V.%			1.8	0.8	5.7	46.4	5.4	18.1	8.0	4.3	2.9	1.2	8.7
LSD.05			1.2	0.9	3.6	0.9	4.5	4.5	2.2	2.6	54	1.0	346
LSD.01			1.6	1.2	4.8	1.2	6.2	6.2	2.9	3.6	74	1.4	470
#REPS			4	4	4	4	4	4	4	4	4	4	4

Planting Date = May18 ; Harvest Date = August 30 ; Previous Crop = Spring Wheat

** Dylan previously tested as CA9990I604C.

** The seed size data as reported reflect the % of the seed sample remaining on top of the sieves stacked in series.

Table 73. Western Regional Chickpea Nursery at Hettinger, North Dakota, No-Till - 2006.
Data from Eric Eriksmoen, North Dakota State University.

Cultivar	Days to Bloom	Duration of Bloom days	Days to Mature	Plant Height cm	1000 Seed wt. grams	Test Weight Lbs/bu	Seed Size			Seed Yield lbs/Ac
							>9mm %	8-9mm %	<8mm %	
Dwelley	65	16	96	35	393	60.2	9	67	24	700
Dylan	58	22	95	26	418	56.4	10	55	35	556
Sierra	65	15	95	36	383	58.2	9	55	36	711
CA9783163C	65	15	97	35	340	--	11	51	38	578
CA9990B1579C	65	16	95	37	383	--	11	60	29	622
CA0090B347C	61	19	95	32	374	60.4	5	70	25	956
CA0190B839C	65	15	97	31	373	--	6	58	36	500
CA0290B730C	65	17	95	35	395	58.0	11	50	39	967
CA9890233W	63	17	98	31	395	56.1	11	71	18	500
CA9990I875W	64	16	97	31	350	--	13	49	38	478
Trial Mean	64	17	96	33	380	58.7	9	58	32	657
C.V. %	1.6	7.1	1.0	10.6	6.5	--	21.0	12.1	19.0	11.3
LSD .05	2	2	2	6	42	--	4	13	NS	128
LSD .01	2	3	NS	NS	NS	--	NS	NS	NS	175

Planting Date: April 11, 2006

Harvest Date: August 2, 2006

Previous Crop: durum.

Table 74. North Central Research Extension Center. Western Regional Chickpea Variety Trial at Minot - 2006.
Data from Mark Halvorson, North Dakota State University.

Variety	Days to 10% Flower	Days to 90% Flower	Mature DAP	Disease 0-9	Plant Height in	Seed Yield				
	DAP	DAP				2004	2005	2006	2 Year	3 Year
Dwellely (CA188359)	48	58	83	7	41	666	93	428	261	396
Dylan (CA99901604C)	43	60	82	7	34	682	63	439	251	395
Sierra (CA9783152C)	46	58	85	6	42	661	266	673	469	533
CA9783163C	47	59	84	5	41	--	116	469	292	--
CA9990B1579C	47	58	84	5	41	--	364	608	486	--
CA0090B347C	46	58	84	4	39	--	1199	1056	1127	--
CA0190B839C	47	59	84	6	46	--	44	313	178	--
CA0290B730C	46	63	84	1	43	--	--	919	--	--
CA9890233W	48	60	85	4	37	650	167	488	328	435
CA99901875W	47	60	85	3	42	--	100	334	217	--
LSD 5%	1	1	1	2	4	NS	157	241	--	--
C.V.%	1.4	1.6	0.9	22.6	7.4	19.8	42.4	29.0	--	--
Mean	46	59	84	5	41	703	254	573	--	--

¹DAP=Days after planting

²Disease score based on scale 0-9 (0 = no disease, 9 = high disease incidence)

Table 75. Western Regional Chickpea Yield Trial, Williston Research Extension Center - 2006.
Data from Neil Riveland, North Dakota State University.

Cultivar	Days to Bloom	Canopy Height		Test Weight	1000 KWT	seed yield	
		cms	inches			lbs/b	gms
Dwellely	48.8	37.5	14.8	60.6	437.4	1039	506.1
Dylan	45.8	31.3	12.3	58.0	481.8	941	846.1
Sierra	46.8	38.0	15.0	60.9	418.8	1084	779.9
CA9783163C	48.5	28.5	11.2	56.2	440.0	1031	764.4
CA9990B1579C	47.3	32.5	12.8	61.3	421.3	1077	685.5
CA0090B347C	45.8	38.3	15.1	63.5	396.9	1143	913.0
CA0190B839C	47.0	40.3	15.9	60.3	422.8	1074	535.6
CA0290B730C	46.8	34.8	13.7	59.0	404.4	1123	636.4
CA9890233W	48.0	29.3	11.5	53.2	482.5	943	606.4
CA99901875W	48.0	36.3	14.3	49.4	493.2	920	699.9
HIGH MEAN	48.8	40.3	15.9	63.5	493.2	1143	913.0
LOW MEAN	45.8	28.5	11.2	49.4	396.9	920	506.1
EXP MEAN	47.3	34.7	13.6	58.2	439.9	1038	697.3
C.V. %	1.5	14.0	14.0	3.4	3.3	3	13.3
LSD 5%	1.0	7.0	2.8	4.5	33.2	73	134.7
LSD 1%	1.4	NS	NS	6.4	47.7	105	181.9
# OF REPS	4	4	4	2	2	2	4
F-TRT	9.0	2.8	2.8	9.2	10.9	12	8.0

Location of the WREC: Latitude 48 8'; Longitude 103 44'W; Elevation 2105 ft.

Planted: May 15 on Fallow. Applied Fertilizer in lbs/a: 0N:0P2O5:0K:

Soil Test to two feet in lbs/a: 92N:22P:260K: 1.6 OM pH-5.9

Soil Type: Williams-Bowbells Loam

Harvested: August 22 Harvested Area: 56 ft2

Table 76. SDSU Kabuli Chickpea Variety Trial – Hayes, SD - 2006.
Data from John Rickertsen, South Dakota State University.

Variety	Height inches	Test Wt Lb/Bu	Yield Lb/A	Yield Kg/Ha	Seed Size seeds/oz
Dwelly	14.0	58.7	583	653	68
Sierra	13.0	59.8	845	947	60
Dylan	13.0	58.1	828	928	54
CDC Yuma	14.0	58.8	741	830	68
CDC Xena	12.5	60.7	784	879	64
CDC Frontier	12.0	59.7	862	967	114
Amit (B-90)	12.5	62.2	958	1074	81
CA9783163C	13.5	56.2	592	664	69
CA9990B1579C	13.5	59.7	767	859	67
CA0090B347C	13.5	61.4	871	976	69
CA0190B839C	17.5	56.7	531	596	69
CA9890233W	15.0	55.3	610	684	63
CA9990I875W	14.5	54.7	680	762	59
LSD (P=.05)	2.9	.	180.4	202.2	.
Grand Mean	13.7	58.8	748	838	73
CV	9.8	.	16.9	16.9	.
Treatment F	2.072		4.194	4.194	
Treatment Prob(F)	0.1013		0.0003	0.0003	

Planted: April 28
Harvested: August 22
Herbicide: Spartan 75DF 4 oz/A

Table 77. SDSU Kabuli Chickpea Variety Trial – Wall, SD - 2006.
Data from John Rickertsen, South Dakota State University.

Variety	Height Inches	Test Wt Lb/Bu	Yield Lb/Ac	Yield Kg/Ha	Seed Size Seeds/Oz
Dwelly	16.5	.	1150	1289	.
Sierra	15.0	.	1411	1582	.
Dylan	14.5	.	1385	1553	.
CDC Yuma	17.3	.	1411	1582	.
CDC Xena	14.0	.	1472	1650	.
CDC Frontier	14.5	.	1437	1611	.
Amit (B-90)	14.3	.	1586	1777	.
CA9783163C	15.5	.	1237	1387	.
CA9990B1579C	16.5	.	1211	1357	.
CA0090B347C	15.3	.	1734	1943	.
CA0190B839C	19.5	.	1263	1416	.
CA9890233W	16.3	.	697	781	.
CA9990I875W	15.3	.	784	879	.
LSD (P=.05)	1.9	.	245.2	274.8	.
Grand Mean	15.7	.	1307	1465	.
CV	8.6	.	13.1	13.1	.
Treatment F	4.673	.	11.101	11.101	.
Treatment Prob(F)	0.0001	.	0.0001	0.0001	.

Table 78. SDSU Desi Chickpea Variety Trial – Hayes, SD - 2006.
Data from John Rickertsen, South Dakota State University.

Variety	Height Inches	Test Wt Lb/Bu	Yield Lb/Ac	Yield Kg/Ha	Seed Size Seeds/Oz
CDC Anna	14.3	60.8	1054	1182	157
CDC Cabri	15.5	58.4	915	1025	98
CDC Desiray	12.5	60.4	880	986	147
CDC Nika	12.8	60.2	958	1074	96
LSD (P=.05)	1.1	.	145.2	162.7	.
Grand Mean	13.8	60.0	952	1067	125
CV	4.9	.	9.5	9.5	.
Treatment F	17.625		2.760	2.760	
Treatment Prob(F)	0.0004		0.1038	0.1038	

Table 79. SDSU Desi Chickpea Variety Trial – Wall, SD - 2006.
Data from John Rickertsen, South Dakota State University.

Variety	Height Inches	Test Wt Lb/Bu	Yield Lb/Ac	Yield Kg/Ha	Seed Size Seeds/Oz
CDC Anna	15.3		1781	1997	
CDC Cabri	18.0		1803	2021	
CDC Desiray	14.8		1586	1777	
CDC Nika	16.0		1677	1880	
LSD (P=.05)	2.7	.	539.5	604.7	
Grand Mean	16.0	.	1712	1919	
CV	10.4	.	18.9	18.9	
Treatment F	2.940		0.389	0.389	
Treatment Prob(F)	0.0914		0.7647	0.7647	