Western Regional Cool Season Legume Evaluation Trials & Nurseries - 2005

Prepared by
Grain Legume Genetics and Physiology Research Unit

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Agricultural Research Service

and

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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 2005 crop year, 71 Western Regional Trials were established at 24 sites in 9 states including 17 for spring dry pea, 11 for spring lentil, 18 for chickpea, 15 for winter dry pea, and 10 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 71 trials. In addition, selections were made in the segregating populations of lentil for plant habit, resistance to lodging and disease resistance.

Spring Pea Trials

Ten spring pea entries in the Western Regional Yield Trial were evaluated at 17 locations across seven states in 2005 (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 'Delta' (yellow). The trials were conducted primarily under dryland conditions; however, three trials in Nebraska were 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 was 2254 lb/a and Delta (2361 lb/a) was the highest yielding line across the trials. Stirling, a recently released upright green cotyledon variety, produced an average yield of 2147 lb/a. The highest yielding breeding lines were PS01102958 (yellow) (2199 lb/a) followed by PS0110767 (green) (2190 lb/a) and PS0010836 (yellow) (2164 lb/a).

Table 1. Summary of Locations Participating in the 2005 Spring Pea Western Regional Yield Trial

Location	Contact	Conditions	Nurseries Seed Sent	Nurseries Data Returned	Nurseries Data Lost
Oregon					
Milton Freewater	Thomas Darnell	Dryland	✓	✓	
Idaho					
Moscow	Stephen Guy	Dryland	✓	✓	
Nezperce	Stephen Guy	Dryland	✓	✓	
Genesee	Stephen Guy	Dryland	✓	✓	
Tammany	Larry Smith	Dryland	✓		✓
Montana					
Kalispel	Duane Johnson, Louise Strang	Dryland	✓	✓	
Moccasin	Chengci Chen, Karnes Neill	Dryland	✓	✓	
Nebraska					
Box Butte	David Baltensperger, Glen Frickel	Irrigated	✓	✓	
Scottlbluff	David Baltensperger, Glen Frickel	Irrigated	✓	✓	
Sydney	David Baltensperger, Glen Frickel	Irrigated	✓	✓	
Sydney	David Baltensperger, Glen Frickel	Dryland	✓	✓	
North Dakota					
Carrington	Blaine Schatz, Steve Zwinger	Dryland	✓	✓	
Hettinger	Eric Eriksmoen	Dryland	✓	✓	
Minot	Mark Halvorson	Dryland	✓	✓	
Williston	Neil Riveland	Dryland	✓	✓	
South Dakota					
Hayes	John Rickertsen	Dryland	✓	✓	
Wyoming					
Powell	Abdel Mesbah	Dryland	✓	✓	
Grand Totals			17	16	1

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

Location	PS0110827	PS0110745	PS0110767	PS0110460	PS0010804	PS0110805	PS810162	PS0010836	PS01102958	PS0010806	Delta	Stirling
Milton-Freewater, OR	1342	1287	1237	1205	1139	1061	939	879	356	289	615	399
Moscow, ID			2210	2080	2170		2140	2200	1940		2210	2260
Nezperce, ID			1840	1660	1870		1720	2000	1670		1990	1840
Genesee, ID												2110
Kalispel, MT	2147	2314	2198	1940	2084	2270	2137	1886	2011	1979	2014	2234
Mocassin, MT	1055	1194	1045	1059	1372	984	1267	1340	1435	1244	1483	1259
Box Butte, NE	2280	2620	2900	2790	2500	2500	2590	2700	2480	2050	3180	2400
Scottsbluff, NE	1830	1530	2540	2750	2280	1890	2660	2360	3030	2130	3000	2620
Sydney, NE (Irr)	2070	1210	1920	1850	1900	1620	1650	1850	2020	1140	1740	1290
Sydney, NE (Dry)	1580	1370	1740	2280	1720	1990	1190	2030	1920	1600	1950	1580
Carrington, ND	3348	3516	3702	3570	3708	3360	3786	3924	4044	3354	4002	3876
Hettinger, ND	1842	1944	1932	1980	2064	1812	2244	1992	1866	1710	2358	1998
Minot, ND	2646	2520	2610	2400	2538	2652	2136	2376	2292	2154	3084	2244
Williston, ND	2464	2412	2567	2748	2752	2276	2282	2899	2858	2631	3108	2902
Hayes, SD	828	662	958	566	758	941	941	862	880	767	1089	828
Powell, WY	3317	2906	3118	2980	2408	3884	3689	3032	3389	3042	3076	4276
Grand Mean	2058	1960	2190	2163	2094	2095	2116	2164	2199	1853	2361	2147

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

Table 3. Post Harvest Quality Evaluations of Dry Pea Lines in the Western Regional Dry Pea Trials - 2005

Cultivar	Weight 100 Seeds	Water Uptake	Hard Seed	Conductivity	Post Soak Seed Color	Post Soak Bleach	Cooking Time	Post Cook Seed Color	Post Cook Broth Color	Seed Coat Separates	Cooked To Mush
	..g..	..%..	..%..	..us/g..		..%..	..minutes..				
PS810162	17.98	115.3	4.3	16.35	G	0.0	23.3	2.67	5.33	Y - 30%	N
PS0010804	20.79	115.4	0.3	35.68	G	1.0	23.3	2.00	5.00	N	N
PS0110460	18.78	110.9	0.0	27.69	G	1.3	21.3	2.00	5.00	Y - 35%	N
PS0110745	16.34	119.6	8.3	26.10	G	0.3	20.7	1.67	5.00	Y - 10%	N
PS0110767	20.19	111.4	2.7	24.91	G	0.3	21.3	2.00	5.00	N	N
PS0110805	16.85	113.4	0.3	30.93	G	0.7	18.0	1.00	4.67	N	N
PS0110827	21.51	107.1	0.3	50.33	G	0.3	20.0	1.00	4.00	N	N
STIRLING	16.28	109.2	3.7	22.25	G	0.7	20.7	1.00	4.33	N	N
PS0010806	20.54	106.7	0.0	39.44	G	0.0	26.7	1.00	4.00	N	N
PS0010836	21.74	109.6	1.3	32.24	G	0.0	19.3	1.00	4.00	Y - 20%	N
PS01102958	20.19	110.1	3.6	31.94	G	0.0	21.3	1.00	4.33	Y - 10%	N
DELTA	20.19	111.6	1.0	21.56	G	0.0	24.0	1.33	4.33	Y - 15%	N

Seed used for post harvest quality evaluations was grown at Pullman, WA in 2005.
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 4. Western Regional Dry Pea Yield Trial, Milton Freewater, OR - 2005 (0597)
Data from USDA-ARS, Pullman, WA.

Cultivar	Origin	Leaf Type	Plant Type	Seed Yield	% Check
				..kg/ha..	
PS0110827	X98P026	-	-	1342	337
PS0110745	X98P020	-	-	1287	323
PS0110767	X98P022	-	-	1237	310
PS0110460	BX97P9-6	-	-	1205	302
PS0010804	BX94P64-11	-	-	1139	286
PS0110805	X98P025	-	-	1061	266
PS810162	X94P058	-	-	939	236
PS0010836	SH95-6-1	-	-	879	221
DELTA		-	-	615	154
*STIRLING	X93P022	-	-	399	100
PS01102958	X96P124	-	-	356	89
PS0010806	X94P81-2	-	-	289	73
Grand Mean				896	
C.V. (%)				16	
$LSD_{(\alpha=0.05)}$				206	

Planting date 4/15/2005. Harvest date 7/18/2005.
Leaf Type; + = normal leaf, - = *afila* or semileafless type. Plant type; + = tall plant type, - = short plant type.
Yield data are means of three replications.
* Check variety

Table 5. Green dry pea variety performance results at Moscow, ID - 2005.
Data from Stephen Guy, University of Idaho.

Variety / Selection	Seed Yield	Seed Weight	Vine Length	Canopy Height	Erect Index*
	lb/acre	g/100	inches	inches	0.0-1.0
Aragorn	2120	20.6	24	24	1.0
Ariel	2050	17.6	24	24	1.0
Bluebird	2280	20.9	21	21	1.0
Camry	2110	20.4	19	19	1.0
Columbian	1920	19.5	30	16	0.5
Cooper	1920	21.6	25	25	1.0
Cruiser	1970	19.1	25	25	1.0
Joel	2100	19.9	35	16	0.5
Karita	2200	24.4	25	25	1.0
K 2	2080	20.0	25	25	1.0
Monarch	2360	20.2	21	21	1.0
Pacifica	2120	20.6	26	25	1.0
Stirling	2260	19.5	19	19	1.0
Stratus	2160	21.5	20	20	1.0
Stratus+	1990	20.7	19	19	1.0
Toledo	1990	23.2	24	24	1.0
Ceb 1090	1930	22.6	25	25	1.0
Ceb 1093	1920	21.1	23	23	1.0
PS 810162	2140	22.1	21	21	1.0
PS 0010804	2170	22.1	23	23	1.0
PS 0110460	2080	21.6	18	18	1.0
PS 0110767	2210	21.1	24	24	1.0
Pro 031-7053	2240	18.3	30	30	1.0
Average	2100	20.9	24	22	1.0
LSD (0.10)	105	0.8	1	1	--
CV (%)	4	3.2	5	6	--

* means canopy height/vine length; 1.0=upright
+ pea inoculum added at planting

Table 6. Yellow dry pea variety performance results at Moscow, ID - 2005.
Data from Stephen Guy, University of Idaho.

Variety / Selection	Seed Yield	Seed Weight	Vine Length	Canopy Height	Erect Index*
	lb/acre	g/100	inches	inches	0.0-1.0
Badminton	2040	19.6	20	20	1.0
Carousel	2070	21.8	25	25	1.0
Delta	2210	20.5	23	23	1.0
Fallon	2100	19.2	26	15	0.6
Rex	2440	22.3	25	22	0.9
Shawnee	1990	19.6	34	14	0.4
Swing	2260	20.9	26	26	1.0
Topeka	2410	21.3	23	22	1.0
Universal	2320	20.7	26	26	1.0
Ceb 4132	2310	22.2	22	22	1.0
PS 0010836	2200	22.9	20	20	1.0
PS 01102958	1940	21.0	21	20	1.0
FDP007	2020	20.7	26	26	1.0
Average	2180	21.0	24	22	0.9
LSD (0.10)	105	0.8	1	1	--
CV (%)	4	3.2	5	5	--

* means canopy height/vine length; 1.0=upright

Table 7. Green dry pea variety performance results at Nezperce, ID - 2005.
Data from Stephen Guy, University of Idaho.

Variety / Selection	Seed Yield	Seed Weight	Vine Length	Canopy Height	Erect Index*
	lb/acre	g/100	inches	inches	0.0-1.0
Aragorn	1860	18.4	30	19	0.6
Ariel	1740	15.8	27	19	0.7
Bluebird	1780	19.6	23	16	0.7
Camry	1860	20.7	21	19	0.9
Columbian	1300	16.4	48	17	0.4
Cooper	1830	23.3	29	29	1.0
Cruiser	1610	16.7	28	19	0.7
Joel	1430	19.4	44	18	0.4
Karita	1550	21.9	29	26	0.9
K 2	1800	17.9	28	24	0.9
Monarch	2130	15.1	27	14	0.5
Pacifica	1770	17.8	30	16	0.5
Stirling	1840	16.2	25	14	0.6
Stratus	2100	20.5	24	17	0.7
Stratus+	1830	20.3	23	16	0.7
Toledo	1700	19.7	28	25	0.9
Ceb 1090	1640	22.7	27	24	0.9
Ceb 1093	1240	20.8	28	27	1.0
PS 810162	1720	18.4	26	20	0.8
PS 0010804	1870	19.4	28	16	0.6
PS 0110460	1660	19.5	23	14	0.6
PS 0110767	1840	18.0	27	20	0.7
Pro 031-7053	1850	16.2	31	21	0.7
Average	1740	18.9	28	20	0.7
LSD (0.10)	176	0.7	3	3	--
CV (%)	8	3.3	8	13	--

* means canopy height/vine length; 1.0=upright
+ pea inoculum added at planting

Table 8. Yellow dry pea variety performance results at Nezperce, ID - 2005.
Data from Stephen Guy, University of Idaho.

Variety / Selection	Seed Yield	Seed Weight	Vine Length	Canopy Height	Erect Index*
	lb/acre	g/100	inches	inches	0.0-1.0
Badminton	1580	18.1	25	15	0.6
Carousel	1730	20.0	33	19	0.6
Delta	1990	20.1	29	21	0.7
Fallon	1840	19.8	27	14	0.5
Rex	1760	19.6	32	16	0.5
Shawnee	1440	20.3	43	16	0.4
Swing	1980	18.3	29	22	0.8
Topeka	2030	18.7	25	14	0.6
Universal	1950	18.9	27	25	0.9
Ceb 4132	2240	20.7	26	18	0.7
PS 0010836	2000	22.0	27	15	0.6
PS 01102958	1670	19.8	27	14	0.5
FDP007	1440	19.9	29	20	0.7
Average	1820	19.7	29	18	0.6
LSD (0.10)	176	0.7	3	3	--
CV (%)	8	3.3	8	13	--

* means canopy height/vine length; 1.0=upright

Table 9. 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	2003	2004*	2005	Average
		----------lb/acre----------		
Green pea				
Ariel	1540	3360	1900	2050
Bluebird	1850	3310	2030	2210
Camry	1670	3060	1990	2080
Columbian	1390	3320	1610	1860
Cooper	1600	3900	1880	2170
Cruiser	1530	3060	1790	1940
Karita	1780	3440	1880	2150
K 2	1440	3440	1940	2040
Monarch	1550	3290	2250	2180
Stirling	1160	3430	2050	1970
Stratus	1830	3670	2130	2320
Toledo	1710	2650	1850	1950
PS810162	1660	3460	1930	2130
Average	1590	3340	1940	2080
LSD (0.10)	140	600	90	--
Yellow pea				
Badminton	1770	3480	1810	2130
Carousel	1560	3810	1900	2140
Fallon	1430	3300	1970	2020
Rex	1620	3670	2100	2220
Shawnee	1780	3120	1720	2020
Swing	1710	3140	2120	2160
Topeka	1720	3970	2220	2370
FDP007	1510	3870	1720	2070
Average	1640	3550	1950	2150
LSD (0.10)	140	600	90	--

* 2004 results are Moscow only and the averages are for five site years.

Table 10. No-till dry pea variety performance results at Genesee, ID - 2005.
Data from Stephen Guy, University of Idaho.

Variety	Seed Yield	Seed Weight	Vine Length	Canopy Height	Erect Index*
	lb/acre	g/100	inches	inches	0.0-1.0
Ariel	1870	15.8	28	28	1.0
Bluebird	1950	20.3	23	22	1.0
Camry	2460	21.8	23	23	1.0
Columbian	1700	18.7	43	17	0.4
Cooper	2260	22.8	29	29	1.0
Cruiser	1980	18.1	29	28	1.0
Joel	2030	20.6	42	17	0.4
Karita	2080	23.0	30	29	1.0
K 2	1800	18.8	27	27	1.0
Monarch	2020	19.5	23	21	0.9
Stirling	2110	19.2	26	26	1.0
Stratus	2240	21.3	25	25	1.0
Toledo	1930	23.1	28	28	1.0
Badminton	1930	19.2	24	24	1.0
Carousel	1960	20.6	30	29	1.0
Fallon	2050	20.6	28	21	0.8
Rex	1710	21.3	32	20	0.6
Shawnee	1720	18.9	42	14	0.3
Swing	2470	20.4	30	29	1.0
Topeka	2290	21.4	26	20	0.8
Average	2030	20.3	29	24	0.9
LSD (0.10)	265	1.0	3	3	--
CV (%)	11	4.1	9	10	--

* means canopy height/vine length; 1.0=upright

Table 11. No-till dry pea variety performance results at Moscow, ID - 2005.
Data from Stephen Guy, University of Idaho.

Variety / Selection	Seed Yield	Seed Weight	Vine Length	Canopy Height	Erect Index*
	lb/acre	g/100	inches	inches	0.0-1.0
Ariel	2060	16.2	28	28	1.0
Bluebird	2240	20.3	24	24	1.0
Camry	2500	21.5	23	23	1.0
Columbian	1420	18.7	48	23	0.5
Cooper	2320	23.3	30	30	1.0
Cruiser	2020	17.7	30	30	1.0
Joel	1520	18.8	45	21	0.5
Karita	2210	22.6	27	27	1.0
K 2	2180	18.1	29	29	1.0
Monarch	2430	17.6	24	24	1.0
Stirling	1960	18.6	26	24	0.9
Stratus	2460	21.5	25	25	1.0
Toledo	2070	21.3	27	27	1.0
Badminton	2040	20.4	22	22	1.0
Carousel	2190	20.9	33	33	1.0
Fallon	1640	20.4	28	21	0.8
Rex	2080	21.9	29	23	0.8
Shawnee	1730	20.6	44	19	0.4
Swing	2250	19.0	29	29	1.0
Topeka	2320	20.5	26	21	0.8
Average	2080	20.0	30	25	0.9
LSD (0.10)	222	0.6	3	3	--
CV (%)	9	2.6	7	10	--

* means canopy height/vine length; 1.0=upright

Table 12. 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	Seed Yield				Seed Weight			
Selection	2003	2004	2005	Average	2003	2004	2005	Average
	----------lb/acre----------				----------g/100----------			
Ariel	1370	2990	1970	2110	17.2	18.7	16.0	17.3
Bluebird	1570	3270	2100	2310	22.0	24.9	20.4	22.4
Columbian	860	2910	1560	1780	19.4	18.4	18.7	18.8
Cruiser	1290	2950	2000	2080	18.5	20.5	17.9	19.0
Joel	1870	3060	1780	2340	20.2	23.0	19.7	21.0
Karita	1490	2920	2150	2190	23.7	25.5	22.8	24.0
K 2	1210	2970	1990	2057	19.5	20.7	18.5	19.6
Monarch	1710	3410	2230	2450	19.0	20.4	18.6	19.3
Stirling	1110	3430	2030	2190	19.7	20.4	18.9	19.7
Stratus	1700	3430	2350	2490	22.5	23.6	21.4	22.5
Toledo	1580	3010	2000	2200	23.5	24.8	22.2	23.5
Badminton	1350	3550	1990	2300	21.6	24.0	19.8	21.8
Fallon	1370	3200	1840	2140	21.7	25.1	20.5	22.4
Rex	1260	3410	1900	2190	23.2	23.2	21.6	22.7
Shawnee	1790	2820	1720	2110	20.4	22.5	19.8	20.9
Swing	1740	3200	2360	2430	21.4	22.3	19.7	21.1
Topeka	1650	3320	2310	2430	22.8	22.6	21.0	22.1
Average	1470	3170	2020	2220	21.0	22.4	19.9	21.1
LSD (0.10)	120	240	160	--	0.4	0.9	0.5	--

Table 13. Western Regional Dry Pea Yield Trial at Kalispell, MT - 2005.
Data from Duane Johnson and Louise Strang.

Cultivar	Cotyledon	Vine Type	Leaf Type	Stand	Bloom	Nodes	Maturity	Height	Yield	Seeds
				#/sqft	date	to 1st flw	date	in	lbs/a	#/lb
PS810162	Green	Short	Semi-leafless	18.6	6/21	11	7/20	16.7	1091	2137
PS0010804	Green	Short	Semi-leafless	**23.2**	6/21	**13**	7/24	18.9	1048	2084
PS0110460	Green	Short	Semi-leafless	18.9	6/20	11	7/24	16.9	1250	1940
PS0110745	Green	Short	Semi-leafless	**22.0**	6/22	11	7/23	20.0	1053	**2314**
PS0110767	Green	Short	Semi-leafless	18.3	6/19	**13**	7/21	20.8	980	2198
PS0110805	Green	Short	Semi-leafless	21.3	6/23	**14**	7/25	**28.8**	721	**2270**
PS0110827	Green	Short	Semi-leafless	19.3	6/21	**14**	7/25	**24.7**	752	2147
Stirling	Green	Short	Semi-leafless	21.8	6/20	10	7/22	20.1	1156	2234
PS0010806	Yellow	Short	Semi-leafless	13.7	6/22	11	7/21	20.6	781	1979
PS0010836	Yellow	Short	Semi-leafless	18.9	6/24	12	7/23	17.6	1222	1886
PS01102958	Yellow	Short	Semi-leafless	**23.4**	6/21	12	7/23	21.7	719	2011
Delta	Yellow	Short	Semi-leafless	**26.9**	6/22	**13**	7/22	22.7	1318	2014
mean				20.5		12		20.8	1008	2101
LSD(0.05)				5.1		2		4.7	435	70
Pr>F				0.004		0.000		0.001	NS	< 0.0001
CV(%mean)				14.9		9.6		13.6		2.0

Table 14. Western Regional Dry Pea Trial - Dry-land dry pea agronomic summary. Exp. 810705 Central Ag Research Center, Moccasin, MT - 2005. Data from Chengci Chen and Karnes Neill.

		Grain Harvest				
		Grain Yield			Grain Weights	
Selection	Plant Height	@ Harvest	Moisture	@ 12%	Test	Kernel
	cm	lbs/acre	%	lbs/acre	lbs/bu	g/1,000
Delta	**42.0** a	**1483** a	12.5 a	1474 a	64.6 a	206.4 a
PS01102958	34.5	1435 a	12.6 a	1422 a	64.0 a	227.7 a
PS0010804	39.8 a	1372 a	12.5 a	1363 a	63.7 a	215.2 a
PS0010836	34.0	1340 a	13.1 a	1321 a	63.4 a	**233.8** a
PS9910140	35.0	1301 a	13.0 a	1284 a	63.3 a	215.7 a
PS810162	35.5	1267 a	11.3	1277 a	61.9	202.0 a
Stirling	32.5	1259 a	11.7	1262 a	63.1 a	188.3
PS0010806	34.3	1244 a	12.5 a	1233 a	63.8 a	233.4 a
PS9910592	31.8	1223 a	11.6	1229 a	63.7 a	188.1
PS0110745	39.1 a	1,194	11.6	1,198	62.6 a	188.3
PS0010792	36.5	1,135	12.2	1,132	63.8 a	218.3 a
Majoret	41.8 a	1,108	**13.1** a	1,093	**64.8** a	204.9 a
PS0110460	30.0	1,059	12.2	1,057	60.3	172.3
PS0110827	41.5 a	1,055	12.1	1,054	63.5 a	215.5 a
PS0110767	33.9	1,045	11.5	1,050	63.7 a	192.2
PS0110805	39.8 a	984	12.0	982	63.1 a	184.2
Mean (n = 64)	36.4	1,219	12.2	1,214	63.3	205.4
LSD (0.05 by t)	4.6	263	0.7	361	2.6	36.5
CV% (s/means)	8.9	15.2	4.2	15.1	2.9	12.5
F-Value (15,45 df)	5.5	2.5	4.9	2.5	1.4 n	2.1

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

n - Denotes not statistically significant at 0.05 level.

Table 15. Western Regional Dry Pea Trial - Variety characteristics summary. Exp. 81 & 860705. Central Ag. Research Center, Moccasin, MT - 2005. Data from Chengci Chen and Karnes Neill.

Selection	Seed Source	Type	Useage	Seed Size [1/]	Vine-Length	Leaf Type
Delta	Central Ag.	Smooth Yellow	Food/Feed	Medium	Semi-dwarf	Semi-leafless
PS9910140	USDA_ARS	Smooth Yellow	Food/Feed	Medium	Semi-dwarf	Semi-leafless
PS0010806	USDA_ARS	Smooth Yellow	Food/Feed	Medium	Semi-dwarf	Semi-leafless
PS0010836	USDA_ARS	Smooth Yellow	Food/Feed	Medium	Semi-dwarf	Semi-leafless
PS01102958	USDA_ARS	Smooth Yellow	Food/Feed	Medium	Semi-dwarf	Semi-leafless
Majoret	Central Ag.	Smooth Green	Food/Feed	Medium	Semi-dwarf	Semi-leafless
Stirling	USDA-ARS	Smooth Green	Food/Feed	Small	Semi-dwarf	Semi-leafless
PS810162	USDA-ARS	Smooth Green	Food/Feed	Medium	Semi-dwarf	Semi-leafless
PS9910592	USDA-ARS	Smooth Green	Food/Feed	Small	Semi-dwarf	Semi-leafless
PS0010792	USDA-ARS	Smooth Green	Food/Feed	Medium	Semi-dwarf	Semi-leafless
PS0010804	USDA-ARS	Smooth Green	Food/Feed	Medium	Semi-dwarf	Semi-leafless
PS0110460	USDA-ARS	Smooth Green	Food/Feed	Medium	Semi-dwarf	Semi-leafless
PS0110745	USDA-ARS	Smooth Green	Food/Feed	Small	Semi-dwarf	Semi-leafless
PS0110767	USDA-ARS	Smooth Green	Food/Feed	Medium	Semi-dwarf	Semi-leafless
PS0110805	USDA-ARS	Smooth Green	Food/Feed	Small	Semi-dwarf	Semi-leafless
PS0110827	USDA-ARS	Smooth Green	Food/Feed	Medium	Semi-dwarf	Semi-leafless

[1/] - Size Classes (g/1000 seeds): Very Large = >290-295; Large = 250-290; Medium = 190-250; Small = <190

Table 16. Nebraska Pea Grain Yields - 2005.
Data from David Baltensperger and Glen Frickel, University of Nebraska.

	Average		Box Butte Irrigated		Scottsbluff Irrigated		Sydney Irrigated		Sydney Dryland	
Variety	YIELD	Seed Weight	YIELD	Seed Weight	YIELD	Seed Weight	YIELD	Seed Weight	YIELD	Seed Weight
	Lbs/Acre	(milligrams)	Lbs/Acre	(milligrams)	Lbs/Acre	(milligrams)	Lbs/Acre	(milligrams)	Lbs/Acre	(milligrams)
1083	2230	226	2700	224	2360	248	1850	210	2030	220
10804	2100	206	2500	190	2280	235	1900	192	1720	208
10806	1730	230	2050	218	2130	263	1140	210	1600	229
11029	2360	212	2480	203	3030	249	2020	194	1920	201
11046	2420	222	2790	218	2750	244	1850	203	2280	222
11074	1680	192	2620	195	1530	204	1210	180	1370	191
11076	2270	203	2900	200	2540	217	1920	193	1740	202
11080	2000	189	2500	180	1890	204	1620	187	1990	185
11082	1940	205	2280	201	1830	221	2070	191	1580	206
810162	2020	205	2590	206	2660	226	1650	184	1190	204
Admiral	2330	208	3080	206	2450	218	2010	197	1780	210
Arvika	2070	148	1680	146	2810	160	2150	149	1650	135
Carneval							1260	157	1310	190
Cruiser	2300	183	2650	176	2130	204	2490	174	1920	176
Delta	2470	201	3180	203	3000	227	1740	181	1950	192
Forager	1630	180	1490	172	2050	205	1260	168	1730	176
Stirling	1970	186	2400	186	2620	194	1290	172	1580	191
Average	2080	200	2490	195	2380	220	1750	185	1720	196
LSD 0.05	230	7	430	14	425	14	570	16	420	10

*Carneval included at Sidney only

Table 17. Western Regional Field Pea Nursery – NDSU Carrington Research Extension Center - 2005.
Data from Blaine Schatz and Steve Zwinger, North Dakota State University.

Variety	Emerged Plant Stand	Days to Bloom	Bloom Duration	Days to PM	Vine Length	Canopy Ht at Harvest	Height Index	Lodging at PM	Harvest Ease	Seed Protein	Seeds/ Pound	1000 KWT	Test Weight	Seed Yield
	ft^2				cm	cm	%	0-9	0-9	%		gms	lbs/bu	bu/ac
Delta	7.4	58.3	16.0	89.7	67	44	67	2.3	4.3	21.7	1845	246	64.9	66.7
PS0010804	6.3	57.0	17.0	90.3	56	25	45	6.0	7.7	19.7	1980	229	63.9	61.8
PS0010806	4.8	58.0	19.7	93.7	61	25	41	6.0	7.3	24.0	1601	284	64.0	55.9
PS0010836	6.9	58.3	16.3	92.0	58	28	49	4.7	6.3	22.7	1640	277	64.2	65.4
PS01102958	7.2	59.7	17.0	90.7	69	27	40	3.7	6.0	22.5	1737	261	64.4	67.4
PS0110460	5.0	58.0	15.0	90.0	49	21	43	7.7	8.7	22.0	1848	246	64.1	59.5
PS0110745	5.7	56.7	16.0	88.7	51	31	61	5.0	6.3	20.4	2192	207	64.5	58.6
PS0110767	6.5	57.3	17.0	91.3	57	34	59	3.7	5.3	22.8	1858	244	64.6	61.7
PS0110805	5.3	61.0	15.3	95.0	80	45	57	3.3	3.7	24.1	2061	220	65.2	56.0
PS0110827	4.1	58.3	18.3	92.7	74	42	57	2.7	3.3	22.1	1870	243	64.4	55.8
PS810162	7.0	54.0	17.3	91.3	55	39	71	3.7	5.3	23.4	1993	228	63.5	63.1
Stirling	6.8	55.3	19.7	92.3	52	28	53	5.0	6.3	21.7	2113	215	65.2	64.6
MEAN	6.1	57.7	17.1	91.5	61	32	54	4.5	5.9	22.3	242	1895	64.4	61.4
C.V.%	12.7	0.8	5.3	0.9	6.8	16.5	17.4	13.7	12.7	2.6	2.2	2.2	0.6	3.9
LSD.05	1.3	0.7	1.5	1.4	6.9	9.1	15.8	1.0	1.3	1.0	18.7	70.9	0.7	4.1
LSD.01	1.8	1.0	2.1	1.9	9.4	12.3	21.4	1.4	1.7	1.3	25.5	96.4	0.9	5.5
#REPS	3	3	3	3	3	3	3	3	3	3	3	3	3	3

Planting Date = April 25 ; Harvest Date = August 2 ; 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 18. Field Pea Performance Test – NDSU Carrington Research Extension Center - 2005.
Data from Blaine Schatz and Steve Zwinger, North Dakota State University.

Obs	Variety	Plant Stand	Days to Bloom	Bloom Duration	Days to PM	Vine Length	Canopy Ht at Harvest	Height Index	Lodging at PM	Harvest Ease	Seed Protein	Seeds/ Pound	1000 KWT	Test Weight	Seed Yield
		ft-2				cm	cm	%	0-9	0-9	%		gms	lbs/bu	bu/ac
Green	**Cotyledon Type**														
1	AP-18	5.0	63.0	18.8	94.5	82	36	46	3.8	5.0	21.9	2203	206	64.4	55.6
2	AP-7	5.2	63.5	18.0	94.3	77	41	54	4.5	5.5	23.2	2108	216	64.4	54.4
15	Aragorn	5.6	60.8	20.3	93.5	75	38	51	3.5	4.5	22.5	2348	193	64.3	58.5
22	Camry	6.4	61.5	19.0	95.3	59	25	43	5.3	6.5	21.7	1824	249	64.9	55.9
24	Ceb 1090	5.5	65.3	14.5	96.0	67	39	58	3.3	4.5	21.7	1568	290	64.6	59.6
25	Ceb 1093	7.1	63.0	12.5	93.3	69	29	43	4.3	4.5	19.0	1801	252	64.5	75.4
31	Cooper	7.0	67.8	14.3	97.5	77	46	60	1.8	3.0	22.1	1585	287	64.7	64.7
32	Cruiser	6.1	62.3	19.8	94.0	76	52	69	3.0	4.3	23.0	2573	178	65.1	55.2
35	DS 49620	6.4	61.3	15.0	92.8	70	30	44	3.8	4.0	22.2	1932	235	64.2	56.2
39	K-2	5.6	60.0	19.0	92.8	75	39	54	3.8	4.5	21.9	2286	199	64.7	55.9
40	Majoret	7.1	61.8	14.3	93.3	76	34	45	2.8	4.3	22.9	1990	228	65.2	66.6
42	Nitouche	5.2	62.8	16.3	95.5	75	47	64	2.8	4.0	22.0	1857	245	64.2	56.4
44	PS99102238	7.1	63.8	17.8	93.8	73	41	57	2.5	3.5	21.9	2219	205	63.8	62.7
45	Pro 011-3172	4.6	60.3	21.0	93.5	74	40	54	3.0	3.5	20.6	2550	178	64.9	56.8
46	Pro 031-7053	5.6	59.5	17.8	93.5	73	35	49	4.3	5.5	18.0	2435	187	64.8	57.6
53	SWC 6198	6.3	63.0	19.3	95.8	84	52	62	2.3	2.5	21.6	1981	229	65.1	51.1
54	SWC 6213	6.7	59.3	20.3	92.8	69	28	41	4.0	5.5	19.2	1870	243	65.6	63.1
55	SWC 6232	6.2	62.3	15.0	91.3	68	27	39	3.8	5.3	20.1	2352	193	64.6	62.2
56	SWC 6246	6.1	61.0	15.3	89.0	76	30	40	4.5	6.3	21.9	2224	204	63.5	55.9
61	SWD 6108	6.7	62.0	18.3	94.5	77	42	54	3.0	4.3	21.1	1965	231	64.8	61.2
62	Stirling	6.0	58.3	23.0	96.3	67	18	27	6.8	8.0	23.4	2204	206	64.9	56.7
63	Stratus	6.7	60.8	17.5	94.5	70	17	26	6.5	8.0	22.5	1898	239	63.3	66.9
64	Striker	6.0	61.0	13.8	92.8	76	39	51	3.8	4.5	23.7	2049	222	64.8	61.4
	MEAN	6.3	61.4	18.0	93.6	74	37	50	3.5	4.6	22.3	2059	226	64.7	60.9
	C.V.%	11.7	1.0	7.9	1.4	9.7	18.1	21.1	22.9	19.6	3.8	4.4	4.1	0.7	8.8
	LSD.05	1.0	0.9	2.0	1.9	9.9	9.2	14.6	1.1	1.2	1.2	126	12.7	0.7	7.4
	LSD.01	1.3	1.1	2.6	2.4	13	12.1	19.2	1.5	1.6	1.5	165	16.7	0.9	9.8
	#REPS	4	4	4	4	4	4	4	4	4	4	4	4	4	4

Planting Date = April 22; Harvest Date = August 1 (86% of lines); 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 19. Field Pea Performance Test – NDSU Carrington Research Extension Center - 2005.
Data from Blaine Schatz and Steve Zwinger, North Dakota State University.

Obs	Variety	Plant Stand	Days to Bloom	Bloom Duration	Days to PM	Vine Length	Canopy Ht at Harvest	Height Index	Lodging at PM	Harvest Ease	Seed Protein	Seeds/ Pound	1000 KWT	Test Weight	Seed Yield
		ft-2				cm	cm	%	0-9	0-9	%		gms	lbs/bu	bu/ac
Yellow	Cotyledon Type														
3	APCM 711452	5.6	59.0	14.5	90.0	73	39	55	2.8	4.0	22.0	2001	227	65.4	59.7
4	APCM 714202	7.0	67.0	15.3	99.0	83	69	84	1.3	1.3	24.4	1557	292	65.9	59.1
5	APCM 714204	6.6	66.8	16.0	100.0	82	62	77	1.3	1.8	25.3	1785	255	65.6	41.6
6	APCM 8302	7.1	64.3	12.0	96.5	77	58	77	1.3	2.3	24.0	1821	250	65.4	52.6
7	APCM 86010	5.5	59.3	19.8	93.5	77	35	47	3.3	4.5	22.6	1734	262	65.8	56.1
8	APCM 93504	4.0	60.3	16.8	94.8	79	28	36	5.5	6.5	22.4	1715	265	64.9	52.0
9	APCM 97107	5.9	58.3	14.8	92.3	73	34	47	3.8	5.0	22.2	1874	242	64.5	66.3
10	APCM 97110	5.6	57.5	26.5	100.5	83	34	42	5.3	5.3	26.2	2130	213	63.9	44.0
11	ASST 2A092	7.0	61.3	20.3	93.5	77	32	41	4.3	5.5	23.2	2274	200	65.7	71.9
12	ASST 2A093	6.0	58.5	22.3	93.3	72	31	43	4.0	5.8	21.7	2075	219	64.6	68.1
13	ASST 2A094	6.9	64.0	18.3	94.8	72	34	46	3.3	5.0	25.1	2123	214	65.0	58.1
14	Alezan	6.5	59.5	18.3	92.0	73	32	43	4.8	5.8	22.8	2002	227	65.1	63.1
16	CDC Bronco	5.9	64.5	18.3	99.3	74	28	37	4.0	5.3	25.1	2345	194	64.9	56.2
17	CDC Golden	5.7	61.3	21.0	92.3	76	35	46	3.5	5.3	23.6	2238	203	65.4	67.0
18	CDC Mozart	6.5	60.0	21.8	93.3	68	19	27	5.8	7.0	21.8	2103	216	64.7	68.3
19	CS 9000T	7.1	59.8	19.3	94.5	69	26	38	4.8	5.8	23.5	1798	253	64.7	66.1
20	CS 9000X	7.7	59.3	13.8	92.3	72	32	44	3.3	4.5	24.0	1656	275	64.8	65.3
21	CS 9001N	7.0	58.0	13.8	88.5	60	22	36	5.8	7.8	22.5	1784	255	64.5	67.5
23	Carneval	5.9	62.3	18.5	93.0	81	43	53	2.8	3.5	21.6	2505	181	64.5	58.4
26	Ceb 4132	6.6	61.0	20.8	96.0	65	25	39	5.0	6.0	22.7	1655	274	65.1	67.5
27	Ceb 4133	5.9	60.5	20.0	95.8	80	34	43	3.8	4.3	22.1	1739	261	65.4	64.1
28	Ceb 4148	6.3	60.5	21.8	93.5	74	34	45	3.3	4.3	21.5	2346	194	64.5	70.4
29	Ceb 4149	6.6	62.8	19.3	96.8	74	41	56	2.3	4.0	24.4	1975	230	64.8	65.4
	MEAN	6.3	61.4	18.0	93.6	74	37	50	3.5	4.6	22.3	2059	226	64.7	60.9
	C.V.%	11.7	1.0	7.9	1.4	9.7	18.1	21.1	22.9	19.6	3.8	4.4	4.1	0.7	8.8
	LSD.05	1.0	0.9	2.0	1.9	9.9	9.2	14.6	1.1	1.2	1.2	126	12.7	0.7	7.4
	LSD.01	1.3	1.1	2.6	2.4	13	12.1	19.2	1.5	1.6	1.5	165	16.7	0.9	9.8
	#REPS	4	4	4	4	4	4	4	4	4	4	4	4	4	4

Planting Date = April 22; Harvest Date = August 1 (86% of lines); 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 Performance Test – NDSU Carrington Research Extension Center - 2005.
Data from Blaine Schatz and Steve Zwinger, North Dakota State University.

Obs	Variety	Plant Stand	Days to Bloom	Bloom Duration	Days to PM	Vine Length	Canopy Ht at Harvest	Height Index	Lodging at PM	Harvest Ease	Seed Protein	Seeds/ Pound	1000 KWT	Test Weight	Seed Yield
		ft^2				cm	cm	%	0-9	0-9	%		gms	lbs/bu	bu/ac
Yellow	**Cotyledon Type**														
30	Ceb 4152	6.5	59.3	22.8	94.8	78	55	70	1.8	2.5	22.7	1813	251	65.8	69.7
33	Cutlass	7.7	58.3	21.5	92.8	70	29	42	4.8	5.8	21.6	2144	212	64.5	69.3
36	DS Admiral	6.6	62.0	15.8	92.0	75	47	62	1.8	2.3	21.0	1937	235	65.4	66.8
37	Eclipse	7.1	62.3	19.8	95.5	68	41	60	2.3	3.5	23.6	1881	241	65.5	64.9
38	Integra	8.0	61.5	15.3	92.5	81	53	66	1.8	2.0	24.4	1934	235	64.2	56.5
41	NA 61 Y	5.3	59.8	21.5	90.8	72	34	48	3.8	5.5	21.6	2913	156	63.8	55.3
43	PS01102958	7.1	62.8	19.0	95.0	73	20	27	6.0	8.0	23.2	1925	236	64.0	61.9
47	SW Capri	7.4	60.8	16.0	89.3	73	37	51	1.5	3.0	21.7	2545	178	64.6	67.1
48	SW Circus	6.4	60.8	14.8	88.5	72	35	48	2.3	3.8	20.8	2358	193	64.3	62.4
49	SW Marquee	6.7	61.0	17.3	90.5	73	44	61	2.3	2.5	22.2	2473	184	65.0	60.3
50	SW Midas	5.4	62.3	16.5	91.5	69	34	51	3.0	4.0	21.4	2266	201	64.8	58.6
51	SW Salute	6.3	61.3	20.0	92.5	75	23	30	4.3	6.0	21.9	2161	210	65.3	63.5
52	SWC 5116	6.0	62.3	19.5	92.8	78	47	61	2.8	4.0	20.1	2036	223	64.3	62.2
57	SWD 5021	5.4	60.3	21.5	91.0	77	48	62	2.0	2.5	22.6	2022	225	63.8	61.1
58	SWD 5123	5.9	62.5	19.3	93.8	71	39	55	2.3	4.0	24.2	2291	198	64.8	53.7
59	SWD 5211	6.7	62.5	17.8	91.8	78	48	61	2.0	2.5	22.2	2614	175	64.2	56.3
60	SWD 5212	7.1	61.3	16.5	89.5	71	41	59	2.5	3.3	21.8	2298	198	64.6	54.6
65	Topeka	6.1	59.5	17.0	92.3	73	17	23	6.8	8.0	21.8	2127	214	64.5	67.1
66	Tudor	7.9	65.8	15.8	95.0	77	53	69	2.0	2.5	22.2	1665	273	65.4	71.4
Misc.	**Type**														
	Marrowfat														
34	DS 46519	5.7	59.3	15.5	92.0	65	32	50	4.0	5.0	19.9	1373	332	64.0	57.5
	MEAN	6.3	61.4	18.0	93.6	74	37	50	3.5	4.6	22.3	2059	226	64.7	60.9
	C.V.%	11.7	1.0	7.9	1.4	9.7	18.1	21.1	22.9	19.6	3.8	4.4	4.1	0.7	8.8
	LSD.05	1.0	0.9	2.0	1.9	9.9	9.2	14.6	1.1	1.2	1.2	126	12.7	0.7	7.4
	LSD.01	1.3	1.1	2.6	2.4	13	12.1	19.2	1.5	1.6	1.5	165	16.7	0.9	9.8
	#REPS	4	4	4	4	4	4	4	4	4	4	4	4	4	4

Planting Date = April 22; Harvest Date = August 1 (86% of lines); 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 Ease scores; 0 = all plants upright ~ very easy harvest, to 9 = all plants flat ~ very difficult to harvest direct

Table 21. Field Pea: Preliminary Yield Trial NDSU Carrington Research Extesion Center - 2005.
Data from Blaine Schatz and Steve Zwinger, North Dakota State University.

Obs	Variety	Emerged Plant Stand	Days to Bloom	Bloom Duration	Days to PM	Vine Length	Canopy Ht at Harvest	Height Index	Lodging at PM	Harvest Ease	Seed Protein	Seeds/ Pound	1000 KWT	Test Weight	Seed Yield
		ft^2				cm	cm	%	0-9	0-9	%		gms	lbs/bu	bu/ac
1	Delta	6.4	58.0	16.3	89.0	65	33	51	2.7	4.3	22.7	1878	242	64.7	63.9
2	PS0010971	6.6	58.0	15.7	90.3	63	25	40	4.7	6.3	19.8	1915	237	64.6	61.5
3	PS0010993	6.4	58.3	15.3	89.0	59	25	43	4.7	6.3	21.7	2039	223	63.6	67.2
4	PS01102958	6.1	60.0	16.3	92.3	63	29	47	5.0	6.3	22.8	1696	268	64.1	67.3
5	PS0110671	6.2	58.7	15.3	90.3	58	20	36	5.3	6.3	22.5	1925	236	64.5	57.6
6	PS0110762	6.3	59.0	17.7	90.7	69	39	56	3.0	4.0	24.0	2004	227	64.6	53.8
7	PS0110767	6.0	57.7	17.0	90.7	61	27	45	4.0	5.7	23.3	1976	230	64.4	57.0
8	PS0110827	5.2	59.3	17.7	93.0	75	51	68	2.7	4.0	22.5	1982	229	64.7	56.2
9	PS02100015	5.5	58.3	16.7	88.7	54	23	43	6.7	8.3	21.2	2274	200	63.2	52.5
10	PS02100026	5.7	58.0	16.0	89.7	46	14	31	8.0	8.3	22.5	1950	233	63.9	54.6
11	PS02100093	5.3	57.3	17.3	90.3	65	27	43	5.3	6.3	22.0	1936	235	63.9	58.1
12	PS02100119	4.0	59.7	16.7	91.7	70	44	63	3.7	5.0	22.9	2276	200	63.3	48.1
13	PS02100128	5.8	60.7	17.0	91.3	71	48	67	2.3	3.0	24.2	2525	180	64.4	56.7
14	PS02101137	5.8	59.3	16.3	90.7	74	31	42	3.3	4.0	21.0	1713	266	64.1	59.6
15	PS02101159	6.0	57.3	19.3	94.3	62	25	40	6.0	6.7	23.8	1711	265	63.8	59.1
16	PS02101178	4.2	57.0	20.3	89.7	62	30	48	4.0	5.7	22.1	2070	220	65.7	65.5
17	PS02101224	6.1	58.3	17.3	92.3	58	18	31	6.7	8.0	21.7	1917	237	63.5	64.0
18	PS99102238	5.5	62.7	14.7	91.0	76	54	71	2.3	3.0	21.6	2171	209	65.0	62.9
19	Stirling	6.0	56.0	19.3	92.3	54	31	57	5.3	5.7	22.7	2124	214	64.7	61.6
20	Toledo	6.4	56.3	15.3	90.7	64	43	67	2.3	3.7	22.3	1701	267	63.6	58.4
	MEAN	5.8	58.5	16.9	90.9	64	32	49	4.4	5.6	22.3	231	1986	64.2	59.2
	C.V.%	13.1	1.0	6.5	1.0	9.3	15.5	16.6	18.5	13.0	2.7	3.8	3.6	1.0	4.5
	LSD.05	0.7	0.9	1.8	1.6	9.8	8.1	13.5	1.3	1.2	1.0	14.5	117.6	1.1	4.4
	LSD.01	0.9	1.3	2.4	2.1	13.0	10.9	18.1	1.8	1.6	1.3	19.3	157.1	1.5	5.9
	#REPS	3	3	3	3	3	3	3	3	3	3	3	3	3	3

Planting Date = April 25 ; Harvest Date = August 2 ; 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 22. Field Pea Variety Trial at Hettinger, North Dakota Continuously Cropped Minimum-Till – 2005.
Data from Eric Eriksmoen, North Dakota State University .

Variety	Days to Bloom	Duration of Bloom	Days to Mature	Plant Height	Lodg.	1000 Seed wt.	Test Weight	--- Seed Yield ---- 2003	2004	2005	Avg. Yield 2 yr	3 yr
		days		inches	0-9*	grams	Lbs/bu	--------- bushels per acre ---------				
Yellow Cotyledon												
CDC Mozart	73	12	101	19	6.0	209	62.4	41.2	29.2	72.3	50.8	47.6
DS Admiral	73	12	100	26	1.5	228	61.6	39.6	29.8	59.1	44.4	42.8
Eclipse	74	12	102	21	3.8	231	62.4		21.2	68.3	44.8	
Delta	74	12	100	20	4.8	228	62.0			61.1		
Green Cotyledon												
Majoret	74	10	100	21	2.8	234	59.2	35.4	33.7	66.4	50.0	45.2
Cruiser	73	12	100	22	2.2	202	61.9	38.4	29.2	67.7	48.4	45.1
Nitouche	74	11	102	25	2.0	243	61.0		42.6	66.4	54.5	
Toledo	75	10	101	21	0.5	218	60.4		34.4	51.3	42.8	
Stirling	71	14	103	15	7.8	207	62.0		20.0	59.3	39.6	
PS01102958	74	11	101	14	7.5	229	61.4			64.1		
PS99102238	76	10	101	19	4.2	191	59.5			67.8		
PS011076	76	11	101	14	8.0	195	60.7			51.0		
PS011767	75	10	102	13	6.2	211	61.9			54.8		
PS0110671	76	10	102	14	7.0	218	61.9			52.3		
PS0010971	76	10	102	12	7.8	212	61.1			50.1		
PS0110827	77	10	103	18	4.2	215	61.7			46.7		
PS0010993	77	9	102	19	6.0	212	62.0			53.8		
Trial Mean	75	11	101	18	4.8	217	61.4	38.8	32.3	59.6	--	--
C.V. %	0.5	4.7	0.9	12.4	24.7	4.3	2.4	6.3	6.7	8.9	--	--
LSD .05	1	1	1	3	1.7	13	NS	3.7	3.1	7.5	--	--
LSD .01	1	1	2	4	2.3	18	NS	5.1	4.3	10.0	--	--

* Lodging: 0 = none, 9 = lying flat on ground.
Planting Date: April 4, 2005
Harvest Date: July 29, 2005
Seeding Rate: 250,000 live seeds / acre.
Notes: The 2003 trial sustained late season heat and moisture stress. The 2004 trial sustained hard frosts during flowering.

Table 23. Western Regional Dry Pea Yield Trial, Continuously cropped, No-Till at Hettinger, North Dakota – 2005. Data from Eric Eriksmoen, North Dakota State University.

Variety	Days to Bloom	Duration of Bloom	Days to Mature	Plant Height	Lodg.	Ht. Index	1000 Seed wt.	Test Weight	Seed Yield
		days		cm	0-9*	**	grams	Lbs/bu	Bu/Ac
PS810162	67	18	102	40	5.0	0.68	199	61.9	37.4
PS0010804	75	11	103	31	7.3	0.53	201	60.8	34.4
PS0110460	76	10	104	27	7.7	0.42	210	61.0	33.0
PS0110745	74	12	101	40	6.0	0.73	194	61.7	32.4
PS0110767	76	10	101	36	7.3	0.79	204	62.6	32.2
PS0110805	75	12	103	45	4.7	0.70	194	63.1	30.2
PS0110827	75	11	102	43	4.7	0.68	210	62.3	30.7
Stirling	70	16	104	38	7.3	0.63	190	63.5	33.3
PS0010806	75	12	104	35	7.7	0.61	226	61.7	28.5
PS0010836	76	10	102	34	7.7	0.63	219	62.2	33.2
PS01102958	76	9	101	36	6.0	0.60	221	63.5	31.1
Delta	76	11	100	46	7.7	0.76	211	62.9	39.3
Trial Mean	74	12	102	38	6.6	0.64	207	62.3	33.0
C.V. %	1.0	8.6	1.7	19.7	12.9	16.6	4.5	1.3	7.7
LSD .05	1	2	NS	NS	1.4	0.18	16	1.4	4.3
LSD .01	2	2	NS	NS	2.0	NS	21	1.9	5.8

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

** Height Index: Mature plant height / green plant height.

Planting Date: April 6, 2005

Harvest Date: July 29, 2005

Previous Crop: barley.

Table 24. North Central Research Extension Center – Minot, ND – Dry Pea Advanced Line Variety Trial – 0506, McPhee - 2005.
Data from Mark Halvorson.

Variety	Days to 10% Bloom	Days to 90% Bloom	Bloom Duration	HT to 1st Pod	Vine Ht	Harvest Ht	Ht Index	Powder Mildew	Lodge	Seed Weight	Test Weight	Protein	Seed Yield			2 Year	3 Year
													2003	2004	2005		
	DAP	DAP	Days	in	in	in	%	0-1	0-9	g/1000	lb/bu	%		---------	---bu/A---	---------	
STIRLING	49	73	23.7	12.2	27.2	8.1	29.8	0	6.7	208.7	63.7	23.7	--	68.4	31.9	50.2	--
TOLEDO	52	71	19.0	16.5	31.1	14.0	45.0	1	2.7	252.2	62.3	22.6	56.1	56.5	52.5	54.5	55
PS99102238	55	73	17.3	20.7	34.4	10.9	31.7	0	4.7	210.0	62.8	21.7	52.3	68.6	46.5	57.6	56
PS0010971	51	71	19.7	14.3	29.9	10.4	42.5	0	5.3	252.7	64.2	21.3	60.4	52.9	40.9	46.9	51
PS0110671	51	70	18.7	16.7	27.2	6.3	23.8	0	8.0	235.0	62.2	24.8	--	57.6	42.3	50.0	--
PS0110762	51	71	20.0	15.6	32.1	9.3	29.1	0	4.7	201.2	62.9	24.1	--	59.5	40.4	50.0	--
PS0110767	51	72	20.3	16.5	25.9	10.6	44.1	0	4.7	229.5	63.5	22.3	--	54.6	42.6	48.6	--
PS0110827	52	73	20.7	17.2	32.2	13.0	40.8	0	3.7	225.7	63.4	23.9	--	51.9	43.4	47.7	--
PS02100015	52	71	19.0	20.0	27.0	10.6	41.8	0	7.3	211.2	62.1	22.5	--	--	28.8	--	--
PS02100026	52	72	20.0	18.1	24.5	10.1	44.6	0	6.0	216.5	62.9	23.1	--	--	33.5	--	--
PS02100093	52	73	20.7	16.5	30.5	9.4	31.1	1	6.0	227.5	62.4	20.9	--	--	48.0	--	--
PS02100128	54	74	20.3	17.7	31.2	13.2	42.3	0	3.3	177.0	63.8	25.4	--	--	41.9	--	--
DELTA	52	70	18.7	17.6	31.1	8.1	26.1	1	6.0	198.7	62.6	23.0	71.5	74.1	44.3	59.2	63
PS0010993	54	73	19.3	17.4	31.0	8.7	28.4	0	6.7	215.5	63.6	22.9	65.6	63.3	42.2	52.8	57
PS01102958	53	74	20.7	15.5	30.8	10.2	33.2	0	5.3	241.0	64.2	23.3	62.9	67.2	28.8	48.0	53
PS02100119	51	72	20.7	15.7	31.5	11.8	37.4	1	4.7	181.3	61.9	22.5	--	--	38.4	--	--
PS02101137	53	73	19.7	17.9	32.7	12.9	39.8	0	3.3	262.2	63.5	21.8	--	--	47.7	--	--
PS02101159	53	74	21.3	16.3	32.2	10.0	31.3	0	6.3	250.8	63.3	23.2	--	--	21.2	--	--
PS02101178	51	74	23.0	13.5	27.7	9.2	33.6	0	5.0	224.2	65.4	21.6	--	--	47.8	--	--
PS02101224	53	74	20.7	11.7	26.0	7.4	28.1	0	7.3	235.7	63.0	22.1	--	--	28.2	--	--
LSD 5%	2	2	2.4	NS	6.1	4.2	NS	0.4	2.4	15.8	0.8	1.2	592	11.4	9.4	--	--
C.V.%	2.2	1.5	7.3	17.4	12.3	24.9	40.0	149.1	27.5	4.3	0.7	3.2	10.0	11.7	14.2	--	--
Mean	52	72	20.2	16.4	29.8	10.2	35.2	0.2	5.4	222.8	63.2	22.8	3580	59	39.6	--	--

DAP = Days after planting
Lodging score based on scale 0-9 (0 = upright, 9 = flat)
Powdery Mildew score based on scale 0-1 (0 = no 1 = yes)

Table 25. Western Regional Dry Pea Variety Trial – North Central Research Extension Center – Minot, ND - 2005.
Data from Mark Halvorson.

Variety	Days to Bloom	Days to Bloom	Bloom Duration	Days to Maturity	# of Repro. Nodes	# of Pods/ Peduncle	Plant Ht	Vine Lgth	Ht Index	Lodge	Protein	Seed Weight	Test Weight	Seed Yield				
														2003	2004	2005	2 Year	3 Year
	10%	90%	Days	DAP			in	in	%	0-9	%	g/1000	lb/bu	bu/A	bu/A	bu/A	bu/A	bu/A
PS810162	47	70	23	141	9.8	2.0	28	51	55.5	5.3	24.4	234.3	62.9	61.1	50.9	35.6	43	49
PS0010804	51	72	21	145	7.4	2.0	26	46	56.8	6.5	20.0	220.5	63.6	--	64.7	42.3	53.5	--
PS0110460	51	72	21	145	8.8	2.0	31	55	56.7	7.5	24.0	225.3	62.3	--	--	40.0	--	--
PS0110745	50	71	21	144	8.9	2.0	26	47	55.8	6.3	21.2	215.5	63.7	--	--	42.0	--	--
PS0110767	50	72	22	144	7.0	1.8	28	50	56.7	5.0	22.5	232.0	63.5	--	--	43.5	--	--
PS0110805	52	74	22	146	8.6	1.8	26	47	55.8	2.5	24.5	215.5	65.0	--	--	44.2	--	--
PS0110827	51	74	22	145	7.8	1.5	30	53	56.6	2.8	22.8	223.3	63.5	--	--	44.1	--	--
Stirling	48	72	24	142	8.0	2.0	26	47	56.0	7.0	23.6	209.8	63.6	--	65.5	37.4	51.5	--
PS0010806	51	74	23	145	8.1	2.0	26	47	56.1	6.3	24.0	270.3	63.4	--	50.3	35.9	43.1	--
PS0010836	52	70	18	146	9.4	2.0	27	48	56.5	6.5	24.7	261.8	64.0	--	62.9	39.6	51.3	--
PS01102958	53	74	21	147	5.8	1.4	24	43	56.3	4.3	22.8	241.5	64.1	--	--	38.2	--	--
Delta	52	70	18	146	7.4	2.0	26	47	56.0	6.0	24.7	207.5	63.2	--	66.5	51.4	59.0	--
LSD 5%	1	2	2	1	3.2	0.4	5	9	1.5	2.0	1.6	17.4	0.6	4.0	10.4	9.8	--	--
C.V.%	1.4	1.8	6.7	0.5	27.1	15.8	13.2	13.0	1.8	25.6	4.6	3.4	0.6	4.5	12.3	16.5	--	--
Mean	51	72	21	145	8.1	1.9	27	48	56.2	5.5	23.3	229.8	63.6	61.3	58.3	41.2	--	--

DAP=Days after planting
Lodging score based on scale 0-9 (0=upright, 9=flat)

Table 26. Western Regional Dry Pea Yield Trial, Williston Research Extension Center - 2005.
Data from Neil Riveland, North Dakota State University.

Cultivar	Days to Bloom	Canopy Height		Test Weight	1000 KWT	Seeds/ Pound	Seed Protein	Harvest Ease	Seed Yield	Seed Yield
		cms	inches	lbs/b	gms		%	0-9*	lbs/acre	bus/acre
PS810162	53.3	41.8	16.4	64.1	229	1980	21.5	5	2282	38.04
PS0010804	58	43	16.9	63.8	208	2185	17.8	7.7	2752	45.86
PS0110460	58.8	38.3	15.1	63.6	230	1996	22.3	4.7	2748	45.79
PS0110745	56.8	35.8	14.1	63.7	195	2328	21.8	4.7	2412	40.21
PS0110767	58.3	47	18.5	64.1	207	2188	23	4.3	2567	42.78
PS0110805	59.3	51	20.1	64.5	197	2305	24.1	3	2276	37.93
PS0110827	58.8	51.8	20.4	63.9	217	2093	22.3	3.3	2464	41.06
Stirling	55.3	38.3	15.1	64.3	208	2183	22.4	5.7	2902	48.37
PS0010806	58	38.8	15.3	63.3	242	1877	23.3	7.7	2631	43.85
PS0010836	59.5	37.3	14.7	63.7	251	1805	22.7	5	2899	48.31
PS01102958	59.8	47	18.5	64.8	232	1952	22.8	2.7	2858	47.63
Delta	58.8	47.5	18.7	64.9	221	2056	22.4	2.7	3108	51.81
HIGH MEAN	59.8	51.8	20.4	64.9	251	2328	24.1	7.7	3108	51.81
LOW MEAN	53.3	35.8	14.1	63.3	195	1805	17.8	2.7	2276	37.93
EXP MEAN	57.9	43.1	17	64	220	2079	22.2	4.7	2658	44.3
C.V. %	0.9	14.5	14.5	0.5	5	5	2.2	24.4	7	7
LSD 5%	0.8	9	3.5	0.7	23	209	1.1	1.9	268	4.46
LSD 1%	1	12.1	4.8	1	33	295	1.5	2.6	360	6
# OF REPS	4	4	4	2	2	2	2	3	4	4
F-TRT	52.4	3.2	3.2	4.5	6	6	20	6.6	8	8.1

* Harvest Ease scores; 0-9 0 = all plants upright to 9 = all plants flat
Location of the WREC: Latitude 48 8'; Longitude 103 44'W; Elevation 2105 ft.
Planted: April 23 on Fallow. Applied Fertilizer in lbs/a: 0N:0P2O5:0K:
Soil Test to two feet in lbs/a: 91N:19P:300K:106S 2.0 OM pH-6.5
Soil Type: Williams-Bowbells Loam
Harvested: July 28 Harvested Area: 60 ft2
Protein percentages reported on a oven dry moisture basis.
Trifluralin at 1.0 lbs/a ai PPI in the fall of 2004 gave good weed control.

Table 27. Field Pea Variety on Fallow, Williston Research Extension Center - 2005.
Data from Neil Riveland, North Dakota State University.

Cultivar	Days to Bloom	Plant Height	Test Weight	1000 KWT	Harvest Ease*	Seeds/ Pound	Seed Protein	Grain Yield 2003	2004	2005	3 yr avg
	fr plntg	in	lbs/b	gms	0-9		%	- - - - - - bu/ac - - - - - -			bu/ac
Yellow cotyledon											
CDC Mozart	60	19	65.0	250	5.0	1811	21.7	47.1	61.9	44.1	51.0
DS Admiral	60	22	65.4	264	1.7	1718	20.9	36.3	54.4	41.0	43.9
Eclipse	60	22	65.6	277	1.7	1766	22.3	43.1	50.4	46.2	46.6
Green cotyledon											
Cruiser	59	22	64.2	235	3.3	1930	21.1	40.4	49.9	39.1	43.1
Majoret	60	21	65.6	279	3.0	1626	22.3	35.7	52.3	44.5	44.2
Nitouche	60	20	64.2	301	2.3	1507	21.4	45.4	53.4	39.7	46.2
Scuba	59	20	64.3	249	4.3	1822	20.2	32.3	47.1	37.0	38.8
Stirling	57	17	65.3	249	7.3	1822	21.2	43.3	52.8	38.1	44.7
Mean	59	20	65.0	263	3.6	1725	21.3	42.0	53.4	41.2	--
CV%	1	12	0.3	1	22.3	1	2.7	8.3	7.3	7.2	--
LSD 0.05	1	NS	0.5	7	1.4	15	NS	4.9	5.6	4.4	--

Planting Date: April 23, 2005 on fallow
Harvest Date: July 28, 2005
* Harvest Ease score: 0-9; 0 = all plants upright to 9 = all plants flat
Seed protein percentages reported on a oven dry moisture basis

Table 28. Pea Variety on Fallow, Williston Research Extension Center - 2005.
Data from Neil Riveland, North Dakota State University .

Cultivar	Days to Bloom	Canopy Height		Test Weight	1000 KWT	Seeds/ Pound	Seed Protein	Harvet Ease	Seed Yield	Seed Yield
		cms	inches	lbs/b	gms		%	0-9*	lbs/acre	bus/acre
YELLOW COTYLEDON										
CDC Mozart	59.5	47.3	18.6	65	250	1811	21.7	5	2644	44.07
Eclipse	60	55.8	21.9	65.6	277	1766	22.3	1.7	2770	46.16
DS Admiral	60	55.3	21.8	65.4	264	1718	20.9	1.7	2457	40.95
GREEN COTYLEDON										
Majoret	59.8	52.5	20.7	65.6	279	1626	22.3	3	2671	44.52
Cruiser	59	54.5	21.5	64.2	235	1930	21.1	3.3	2344	39.07
Nitouche	59.8	50.5	19.9	64.2	301	1507	21.4	2.3	2380	39.66
Stirling	57.3	42.3	16.6	65.3	249	1822	21.2	7.3	2288	38.13
Scuba	58.8	50.8	20	64.3	249	1822	20.2	4.3	2222	37.03
HIGH MEAN	60	55.8	21.9	65.6	301	1930	22.3	7.3	2770	46.16
LOW MEAN	57.3	42.3	16.6	64.2	235	1507	20.2	1.7	2222	37.03
EXP MEAN	59.3	51.1	20.1	65	263	1725	21.3	3.6	2472	41.2
C.V. %	0.7	11.6	11.6	0.3	1	1	2.7	22.3	7	7.23
LSD 5%	0.6	NS	NS	0.5	7	15	NS	1.4	263	4.38
LSD 1%	0.8	NS	NS	0.8	10	22	NS	1.9	358	5.96
# OF REPS	4	4	4	2	2	2	2	3	4	4
F-TRT	19.2	2.4	2.4	15.1	114	114	2.9	17.5	5	5

* Harvest Ease scores; 0-9 0 = all plants upright to 9 = all plants flat
Location of the WREC: Latitude 48 8'; Longitude 103 44'W; Elevation 2105 ft.
Planted: April 23 on Fallow. Applied Fertilizer in lbs/a: 0N:0P2O5:0K:
Soil Test to two feet in lbs/a: 91N:19P:300K:106S 2.0 OM pH-6.5
Soil Type: Williams-Bowbells Loam
Harvested: July 28 Harvested Area: 60 ft2
Protein percentages reported on a oven dry moisture basis.
Trifluralin at 1.0 lbs/a ai PPI in the fall of 2004 gave good weed control.

Table 29. Pea Variety on Fallow, McPhee, at Williston Research Extension Center - 2005.
Data from Neil Riveland, North Dakota State University.

Cultivar	Days to Bloom	Canopy Height		Test Weight	1000 KWT	Seeds/ Pound	Seed Protein	Harvet Ease	Seed Yield	Seed Yield
		cms	inches	lbs/b	gms		%	0-9*	lbs/acre	bus/acre
Delta	58.7	48.7	19.2	64.6	228	1993	22.3	1.7	3285.9	54.8
Stirling	57.0	38.7	15.2	64.3	208	2179	22.0	5.0	2971.7	49.5
Toledo	57.3	57.3	22.6	62.9	254	1787	21.0	3.0	2529.4	42.2
PS01102958	59.7	46.0	18.1	64.8	244	1861	22.5	4.0	2843.3	47.4
PS99102238	61.0	54.7	21.5	63.9	201	2261	21.2	1.0	2825.7	47.1
PS0010993	58.7	50.3	19.8	64.4	213	2128	21.7	3.3	3235.3	53.9
PS0010971	58.0	48.3	19.0	63.8	219	2071	18.7	6.3	3205.1	53.4
PS0110762	58.0	43.3	17.1	63.5	204	2226	24.4	4.7	2609.0	43.5
PS0110767	58.3	40.0	15.7	64.1	222	2047	22.5	4.0	2837.1	47.3
PS0110671	58.3	42.7	16.8	63.6	235	1932	22.2	3.0	2683.1	44.7
PS0110827	59.3	48.7	19.2	63.7	218	2080	21.5	2.7	2618.1	43.6
PS02100093	58.0	52.7	20.7	64.5	216	2097	21.1	4.3	2859.6	47.7
PS02100015	58.0	38.3	15.1	63.9	198	2295	21.7	3.7	2658.0	44.3
PS02100026	58.3	52.7	20.7	64.0	215	2113	23.8	7.0	2377.6	39.6
PS02100128	59.0	41.7	16.4	64.6	179	2537	23.8	3.0	2527.5	42.1
PS02100119	57.3	47.0	18.5	62.4	199	2279	23.1	6.0	2081.3	34.7
PS02101178	58.0	40.7	16.0	65.3	218	2085	22.0	3.7	2921.4	48.7
PS02101159	59.0	41.7	16.4	64.2	238	1906	23.0	5.7	2411.0	40.2
PS02101137	58.7	44.0	17.3	64.1	233	1943	20.6	3.7	2692.1	44.9
PS02101224	58.7	38.7	15.2	64.1	222	2041	21.8	3.3	3058.2	51.0
HIGH MEAN	61.0	57.3	22.6	65.3	254	2537	24.4	7.0	3285.9	54.8
LOW MEAN	57.0	38.3	15.1	62.4	179	1787	18.7	1.0	2081.3	34.7
EXP MEAN	58.5	45.8	18.0	64.0	218	2093	22.0	4.0	2761.5	46.0
C.V. %	0.9	18.1	18.1	0.5			3.3	25.5	5.7	5.7
LSD 5%	0.9	NS	NS	0.7			1.5	1.7	260.8	4.4
LSD 1%	1.2	NS	NS	0.9			2.1	2.2	349.4	5.8
# OF REPS	3.0	3.0	3.0	2.0	1	1	2.0	3.0	3.0	3.0
F-TRT	8.5	1.4	1.4	8.3	0	0	6.3	6.7	11.3	11.3

* Harvest Ease scores; 0-9 0 = all plants upright to 9 = all plants flat
Location of the WREC: Latitude 48 8'; Longitude 103 44'W; Elevation 2105 ft.
Planted: April 23 on Fallow. Applied Fertilizer in lbs/a: 0N:0P2O5:0K:
Soil Test to two feet in lbs/a: 91N:19P:300K:106S 2.0 OM pH-6.5
Soil Type: Williams-Bowbells Loam
Harvested: July 28 Harvested Area: 60 ft2
Protein percentages reported on a oven dry moisture basis.
Trifluralin at 1.0 lbs/a ai PPI in the fall of 2004 gave good weed control

Table 30. Field Pea Variety of Recrop, Williston Research Extension Center - 2005.
Data from Neil Riveland, North Dakota State University.

Cultivar	Days to Bloom	Plant Height	Test Weight	1000 KWT	Harvest Ease*	Seeds/ Pound	Seed Protein	Grain Yield 2003	2004	2005	3 yr avg
	fr plntg	in	lbs/b	gms	0-9		%	- - - - - - bu/ac - - - - -			bu/ac
Yellow cotyledon											
Carneval	61	16	64.2	189	3.8	2403	21.5	33.1	59.9	24.8	39.3
CDC Bronco	62	15	63.9	194	3.3	2342	24.0	--	--	27.8	--
CDC Golden	60	20	64.8	191	2.5	2371	22.1	--	--	29.9	--
CDC Mozart	60	14	64.7	201	5.8	2256	23.0	51.8	67.5	29.7	49.7
Ceb 4132	60	14	64.1	238	4.8	1909	21.8	--	--	31.8	--
Ceb 4133	60	18	64.3	226	4.8	2011	21.6	--	--	25.5	--
Cutlass	59	16	63.7	213	4.0	2127	22.1	--	--	32.5	--
DS Admiral	60	18	64.2	214	2.5	2124	21.3	--	67.3	29.3	--
Eclipse	61	18	64.9	218	3.0	2092	22.9	--	--	31.1	--
Integra	60	16	63.2	235	3.5	1934	23.3	--	--	25.2	--
PS01102958	60	16	63.2	232	6.5	1956	23.5	--	--	28.7	--
SW Capri	59	18	64.0	181	2.5	2511	22.7	--	--	34.6	--
SW Marquee	60	16	64.5	176	2.0	2571	24.7	--	--	30.3	--
SW Salute	60	17	64.6	194	3.3	2342	22.6	--	--	31.3	--
SWC 5116	61	18	62.6	209	2.8	2176	21.2	--	--	26.4	--
Topeka	60	16	63.9	207	8.0	2187	21.8	--	--	27.3	--
Tudor	63	19	64.4	235	1.8	1932	22.6	--	--	30.1	--
Green cotyledon											
Camry	60	13	63.0	212	6.0	2141	20.9	--	--	26.9	--
Ceb 1093	63	17	63.9	243	4.3	1867	19.3	--	--	22.6	--
Cooper	63	17	64.1	257	2.5	1764	20.8	--	--	30.3	--
Cruiser	59	17	62.9	182	4.3	2496	22.3	--	55.3	26.9	--
Majoret	60	15	64.4	224	3.5	2030	23.6	33.7	60.9	27.4	40.7
Montero	61	19	64.6	187	3.3	2467	21.3	--	--	31.4	--
Nitouche	60	20	62.6	247	4.0	1835	21.9	--	54.3	25.8	--
PS99102238	62	18	63.4	193	1.5	2356	21.7	--	--	28.1	--
Scuba	61	17	63.0	197	5.5	2303	21.7	36.9	51.9	23.1	37.3
Stirling	58	14	64.2	196	6.5	2317	22.3	--	58.1	25.0	--
Stratus	60	16	62.9	227	6.3	1996	22.2	--	--	28.0	--
Striker	60	19	64.9	220	3.8	2067	22.5	--	--	26.2	--
Mean	60	17	63.9	211	4.1	2171	22.2	39.1	59.4	28.4	--
CV%	1	18	0.6	4	29.2	4	3.1	16.9	5.6	9.7	--
LSD 0.05	1	NS	0.8	15	1.7	181	1.4	10.0	4.9	3.9	--

Planting Date: April 25 into tilled recrop
Harvest Date: August 8
* Harvest Ease score: 0-9 0 = all plants upright to 9 = all plants flat
Seed protein percentages reported on a oven dry moisture basis

Table 31. Pea Variety on Recrop, Williston Research Extension Center - 2005.
Data from Neil Riveland, North Dakota State University.

Cultivar	Days to Bloom	Canopy Height		Test Weight	1000 KWT	Seeds/ Pound	Seed Protein	Harvet Ease	Seed Yield	Seed Yield
		cms	inches	lbs/b	gms		%	0-9*	lbs/acre	bus/acre
YELLOW COTYLEDON										
CDC Mozart	59.5	34.5	13.6	64.7	201	2256	23	5.8	1785	29.74
Eclipse	60.8	45.8	18	64.9	218	2092	22.9	3	1869	31.14
DS Admiral	60.3	44.5	17.5	64.2	214	2124	21.3	2.5	1758	29.3
PS01102958	60.3	40	15.7	63.2	232	1956	23.5	6.5	1719	28.65
SW Capri	59	44.5	17.5	64	181	2511	22.7	2.5	2074	34.55
Ceb 4133	59.8	45.8	18	64.3	226	2011	21.6	4.8	1527	25.45
Topeka	59.8	41.8	16.4	63.9	207	2187	21.8	8	1638	27.29
SWC 5116	60.5	44.5	17.5	62.6	209	2176	21.2	2.8	1582	26.36
SW Marquee	60.3	40.8	16	64.5	176	2571	24.7	2	1816	30.26
Carneval	60.8	41.5	16.3	64.2	189	2403	21.5	3.8	1486	24.76
SW Salute	60	44.3	17.4	64.6	194	2342	22.6	3.3	1879	31.31
Tudor	63	48.5	19.1	64.4	235	1932	22.6	1.8	1804	30.06
Ceb 4132	60.3	34.3	13.5	64.1	238	1909	21.8	4.8	1910	31.83
CDC Golden	60	51.5	20.3	64.8	191	2371	22.1	2.5	1797	29.94
CDC Bronco	62	37.5	14.8	63.9	194	2342	24	3.3	1665	27.75
Cutlass	58.8	39.3	15.5	63.7	213	2127	22.1	4	1947	32.45
CDC Mozart #	59	39	15.4	64	202	2245	22.9	6.8	2083	34.71
Integra	60	40.3	15.8	63.2	235	1934	23.3	3.5	1511	25.18
GREEN COTYLEDON										
Majoret	60.3	37.8	14.9	64.4	224	2030	23.6	3.5	1643	27.38
Cruiser	59	43.5	17.1	62.9	182	2496	22.3	4.3	1616	26.93
Nitouche	60	51	20.1	62.6	247	1835	21.9	4	1547	25.77
Stirling	58	34.8	13.7	64.2	196	2317	22.3	6.5	1499	24.98
PS99102238	62.3	45	17.7	63.4	193	2356	21.7	1.5	1689	28.14
Stratus	60	41.3	16.2	62.9	227	1996	22.2	6.3	1681	28.01
Cooper	63.3	42.8	16.8	64.1	257	1764	20.8	2.5	1816	30.27
Camry	60	33.8	13.3	63	212	2141	20.9	6	1613	26.89
Ceb 1093	62.5	43.5	17.1	63.9	243	1867	19.3	4.3	1355	22.58
Striker	60	47.3	18.6	64.9	220	2067	22.5	3.8	1573	26.2
Scuba	60.5	44	17.3	63	197	2303	21.7	5.5	1386	23.1
Montero	61.3	47	18.5	64.6	187	2467	21.3	3.3	1881	31.35
HIGH MEAN	63.3	51.5	20.3	64.9	257	2571	24.7	8	2083	34.71
LOW MEAN	58	33.8	13.3	62.6	176	1764	19.3	1.5	1355	22.58
EXP MEAN	60.4	42.3	16.7	63.9	211	2171	22.2	4.1	1705	28.41
C.V. %	0.9	18.1	18.1	0.6	4	4	3.1	29.2	10	9.68
LSD 5%	0.8	NS	NS	0.8	15	181	1.4	1.7	233	3.88
LSD 1%	1	NS	NS	1.1	21	245	1.9	2.2	309	5.15
# OF REPS	4	4	4	2	2	2	2	4	4	4
F-TRT	20.2	1.5	1.5	5.7	17	12	4.9	7.8	5	5

Relative efficiency Rectangular lattice vs RCBD analysis for yield = 179%
Planted at 12 PLS/ft2. All others at 8 PLS/ft2.
* Harvest Ease scores; 0-9 0 = all plants upright to 9 = all plants fla
Location of the WREC: Latitude 48 8'; Longitude 103 44'W; Elevation 2105 ft.
Planted: April 25 into tilled recrop.
Applied Fertilizer in lbs/a: 0N:00P2O5:0K:
Soil Test to two feet in lbs/a: 36N:56P:465K 2.5% OM pH-6.8
Soil Type: Williams-Bowbells Loam
Harvested: August 8 Harvested Area: 60 ft2
Grain protein percentages reported on a oven dry moisture basis.
Trifluralin at 1.0 lbs/a ai PPI and Assure II postemergence gave good weed control

Table 32. Field Pea Trial at Hayes, SD - 2005.
Data from John Rickertsen, South Dakota State University .

Variety	Height	Lodging	Test Wt	Yield	Yield	Yield	Seed Size
	Inches	0-9	Lb/Bu	Bu/AC	Lb/Ac	Kg/Ha	seeds/lb
PS810162	14.0	1.5	56.6	15.7	941	1055	2250.0
PS0010804	15.0	3.0		12.6	758	850	2560.0
PS0110460	13.5	5.5		9.4	566	635	2320.0
PS0110745	15.5	1.0		11.0	662	742	2650.0
PS0110767	16.0	0.5		16.0	958	1074	2680.0
PS0110805	17.5	1.5		15.7	941	1055	2710.0
PS0110827	16.5	1.0		13.8	828	928	2330.0
Stirling (PS610152)	14.0	5.0		13.8	828	928	2640.0
PS0010806	14.5	5.0		12.8	767	859	2170.0
PS0010836	16.5	4.0		14.4	862	967	2440.0
PS01102958	13.5	3.5		14.7	880	986	2380.0
Delta (PS960007)	17.0	1.0	59.1	18.2	1089	1221	2440.0
Carneval	15.5	0.0		12.3	741	830	2810.0
CDC Mozart	16.0	4.0		15.8	950	1064	2550.0
LSD (P=.05)	3.64	2.78	.	1.68	100.8	113.0	.
Standard Deviation	1.69	1.29	.	1.18	70.5	79.0	.
CV	10.99	49.45	.	8.39	8.39	8.39	.
Grand Mean	15.36	2.61	43.68	14.01	840.71	942.31	2495.0
Bartlett's X2	3.587	2.169	.	3.564	3.564	3.564	.
P(Bartlett's X2)	0.98	0.998	.	0.995	0.995	0.995	.
Replicate F	2.459	1.740		53.236	53.243	53.241	
Replicate Prob(F)	0.1408	0.2098		0.0001	0.0001	0.0001	
Treatment F	1.201	4.266		14.808	14.810	14.810	
Treatment Prob(F)	0.3732	0.0068		0.0001	0.0001	0.0001	

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Column 4: TY1 = 5.808*[3]
Column 5: TY2 = 348.48*[3]
Column 6: TY3 = 390.5967*[3]

Table 33. Western Regional Dry Pea Yield Trial-0597, Powell, WY - 2005. Data from Abdel Mesbah, University of Wyoming.

Cultivar	Accession No.	Yield	
		22" row	7" row
		lbs/ac	lbs/ac
….	PS810162	1517	3689
….	PS0010804	1312	2408
….	PS0110460	1517	2980
….	PS0110745	1583	2906
….	PS0110767	1736	3118
….	PS0110805	2209	3884
….	PS0110827	2444	3317
Stirling	PS610152	2662	4276
….	PS0010806	1607	3042
….	PS0010836	2121	3032
….	PS01102958	2150	3389
Delta	PS960007	1464	3076
	Mean	1860	3260
	C.V.%	19.8	24.3
	LSD (5%)	531	1130

Planting date: June 4

Harvest date: September 30

Winter Feed Pea Trials

Eight winter feed pea entries were included in the 2005 Winter Feed Pea Western Regional Yield Trial and evaluated at 15 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 eight entries represent the most advanced breeding lines from the USDA-ARS breeding program and included one green and seven yellow cotyeldon types. Breeding line PS9830F009 was recently released under the name 'Specter' and is the first white-flowered winter feed pea to be 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 eight lines the highest yielding line was PS9830S358 (2668 lb/a) followed by PS9830F011 (2648 lb/a). Specter produced an average yield of 2213 lb/a.

South Dakota

The Dakota Lakes (Pierre) site suffered from poor stands, winter lentils at Wall had herbicide injury from Spartan and the winter peas I planted at Bison had almost 100% winterkill. (John Rickertson)

Table 34. Summary of Locations Participating in the 2005 Winter Feed Pea Western Regional Yield Trial.

Location	Contact	Conditions	Nurseries		
			Seed Sent	Data Returned	Data Lost
Montana					
Bozeman	Perry Miller	Dryland	✓		✓
Moccasin	Chengci Chen, Karnes Neill	Dryland	✓	✓	
Kalispell	Duane Johnson, Louise Strang	Dryland	✓		✓
North Dakota					
Carrington	Steve Zwinger, Blain Schatz	Dryland	✓		✓
Hettinger	Eric Eriksmoen	Dryland	✓		✓
Minot	Mark Halvorson	Dryland	✓		✓
Prosper (Fargo)	Burton Johnson	Dryland	✓		✓
Williston	Neil Riveland	Dryland	✓		✓
Oregon					
Pendelton	Stephen Machado	Dryland	✓		✓
The Dalles	Brian Tuck	Dryland	✓		✓
South Dakota					
Wall	John Rickertsen	Dryland	✓	✓	
Washington					
Almira	Adrian Higginbotham	Dryland	✓		✓
Pullman	Rob Gallagher, DennisPittman	Dryland	✓		✓
Waterville	Howard Nelson	Dryland	✓	✓	
Wilbur	Howard Nelson	Dryland	✓	✓	
Grand Totals			15	4	11

Table 35. Location Yield Summary (lb/a) for Western Regional Winter Feed Peas

Location	PS9830F011	PS9430706	PS9830S358	PS7530726	PS9630448	PS9830S431	PS9830F010	Specter PS9830F009
Moccasin, MT	2204	1653	2386	1982	1908	1972	1868	1850
Wall, SD	1758	1080	1800	1422	1572	1332	1878	1314
Wilbur, WA	3630	2868	3388	2638	3243	3037	2977	3364
Waterville, WA	3001	2372	3097	2106	2662	2783	2686	2323
Grand Mean	2648	1993	2668	2037	2346	2281	2352	2213

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

Table 36. Western Regional Winter Dry Pea Trial - Dry-land winter dry pea agronomy results. Exp. 820705, Central Ag Research Center, Moccasin, MT - 2005. Data from Chengci Chen and Karnes Neill.

		Dry Matter		----------Dry Pea Grain Production----------				
Selection	Spring Density	Height	Yield	Height	Stand	Test Wt	Moisture	Yield
	#/ft^2	in	lbs/acre	in	index	lbs/bu	%	lbs/acre
PS9830S358	7.0	21.6	3,752	21.3	**0.986** [a]	64.3 [a]	**10.9** [a]	**2,386** [a]
PS9830F011	6.8	21.8	3,723	19.9	0.915 [a]	64.1 [a]	10.8 [a]	2,204
PS7530726	7.2	24.0	**4,418** [a]	18.9	0.828	63.0	10.5	1,982
PS0930S431	6.7	33.1	4,293	**21.7** [n]	0.662	**64.3** [a]	10.7 [a]	1,972
PS9630448	6.4	35.8 [a]	4,246	21.1	0.592	63.5	10.4	1,908
PS9830F010	6.7	36.3 [a]	3,981	20.8	0.571	63.5	10.1	1,868
PS9830F009	**8.1** [a]	36.8 [a]	4,281	20.7	0.566	64.1 [a]	10.4	1,850
Granger	7.7	37.7 [a]	4,212	20.8	0.552	64.3 [a]	10.8 [a]	1,808
PS9430706	7.1	**38.2** [a]	3,803	21.3	0.558	64.2 [a]	10.3	1,653
Means (n = 36)	7.1	31.7	4,079	20.7	0.692	63.9	10.5	199
LSD (t = 0.05)	1.5	4.5	878	2.7	0.144	0.5	0.3	133
CV% (s/mean)	14.8	9.8	14.8	8.8	14.3	0.6	2.0	4.6
F-value	1.1	21.0	0.8	0.8	12.0	6.9	6.6	23.1

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

[n] - Denotes not statistically significant at 0.05 level.

Table 37. Winter Pea Variety Trial at Wall, SD - 2005.
Data from John Rickertsen, South Dakota State University.

Variety	Plot Wt	Pint Wt	Test Wt.	Yield
	gm/plot	gm/pint	Lb/Bu	Bu/A
PS9430706	1127.0	447.8	63.2	18.0
PS7530726	1481.5	439.8	62.0	23.7
PS9630448	1634.5	444.3	62.7	26.2
PS9830F009	1367.5	445.5	62.9	21.9
PS9830F010	1955.5	447.8	63.2	31.3
PS9830F011	1833.0	446.3	63.0	29.3
PS9830S358	1874.0	443.3	62.5	30.0
PS9830S431	1384.5	452.5	63.8	22.2
LSD (P=.05)	338.88	6.06	0.85	5.42
Standard Deviation	230.41	4.12	0.58	3.69
CV	14.56	0.92	0.92	14.56
Grand Mean	1582.19	445.88	62.91	25.32
Bartlett's X2	4.126	4.607	4.605	4.126
P(Bartlett's X2)	0.765	0.708	0.708	0.765
Replicate F	4.000	1.695	1.713	4.000
Replicate Prob(F)	0.0213	0.1987	0.1950	0.0213
Treatment F	6.379	3.309	3.326	6.379
Treatment Prob(F)	0.0004	0.0156	0.0152	0.0004

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Column 3: T1 = [4]*64/453.6
Column 4: TY2 = 0.01600564*[3]

Table 38. Winter Pea Variety Trial at Wilbur, WA - 2005.
Data from Howard Nelson.

Variety		3-Year Average		2-Year Average		2005 Yield		2004 Yield		2003 Yield	
		Lbs/acre		Lbs/acre		Lbs/acre		Lbs/acre		Lbs/acre	
Whistler	Yellow	3168	(1)	2983	(1)	3558	(2)	2408	(2)	3539	(2)
PS9830F011	Yellow			2934	(2)	3630	(1)	2239	(3)		
PS9430706	Yellow			2856	(3)	2868	(8)	2844	(1)		
PS9830S358	Yellow			2644	(4)	3388	(3)	1900	(4)		
PS7530726	Green			1930	(5)	2638	(9)	1222	(5)		
PS9830F009	Yellow					3364	(4)				
PS9630448	Yellow					3243	(5)				
PS9830S431	Yellow					3037	(6)				
PS9830F010	Yellow					2977	(7)				

Table 39. Winter Pea Variety Trial at Waterville, WA - 2005.
Data from Howard Nelson.

Variety	Yield
	lbs/a
PS9830S358	3097
PS9830F011	3001
Whistler Treated	2953
Whistler Untreated	2783
PS9830S431	2783
PS9830F010	2686
PS9630448	2662
PS9430706	2372
PS9830F009	2323
PS7530726	2106

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 40. Summary of Locations Participating in the 2005 Spring Lentil Western Regional Yield Trial.

Location	Contact	Conditions	Nurseries Seed Sent	Nurseries Data Returned	Nurseries Data Lost
		Idaho			
Genesee	Stephen Guy	Dryland	✓	✓	
Moscow	Stephen Guy	Dryland	✓	✓	
Nezperce	Stephen Guy	Dryland	✓	✓	
		Montana			
Kalispell	Duane Johnson, Louise Strang	Dryland	✓	✓	
Moccasin	Chengci Chen, Karnes Neill	Dryland	✓	✓	
		North Dakota			
Carrington	Blaine Schatz, Steve Zwinger	Dryland	✓	✓	
Hettinger	Eric Eriksmoen	Dryland	✓	✓	
Minot	Mark Halvorson	Dryland	✓	✓	
Williston	Neil Riveland	Dryland	✓	✓	
		Oregon			
Milton Freewater	USDA-ARS	Dryland	✓	✓	
		Wyoming			
Powell	Abdel Mesbah	Dryland	✓	✓	
Grand Totals			11	11	0

Table 41. 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	Milton Freewater, OR	Powell, WY	Grand Mean
LC860359L	1040	590	546	706	1442	722	2054	1604	245		1046
LC860616L	1590	960	544	883	1548	633	1779	1675	535		1085
LC99600747L			450	866	1133	633	2064	1483	631	1554	1037
LC99602075L	1150	870	428	810	1095	467	1886	1517	460		952
LC01600698L			341	843	1257	867	2041	1467	529	1785	1049
LC01600732R	1470	1110	639	813	1323	467	2340	1707	497		1112
LC01600828R			756	809	1192	845	1416	1716	202	1331	991
LC01600736E	1300	910	714	885	1927	500	1873	1404	417	2354	1103
LC01602307E	1390	1350	834	850	1798	856	2451	1747	532		1295
LC02600698E			512	931	1730	689	2330	1513	463		1167
LC02600397P	1380	980	450	758	1669	711	1834	1504	573	1844	1071
LC01601751T			443	780	1347	533	1553	1137	427	1215	889
LC1602062T	1830	1190	558	977	1776	1056	1488	1336	708		1128
LC02600449T	1280	630	422	694	912	378	754	1108	375	1290	663
Pennell	1160	870	391	939	1527	867	1927	1480	379		1073
Merrit	1700	1200	355	873	1885	711	1644	1336	724	2353	1075
Richlea	1570	1060	458	788	1592	800	2490	1673	572	2296	1196
Eston	1550	1220	638	878	1660	567	2289	1489	554	2956	1154
Pardina	1810	1240	1122	961	1702	911	1085	1383	854	2997	1145
Crimson	1500	1190	755	821	1918	722	1296	1453	638	2827	1086

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

Table 42. Post Harvest Quality Evaluations of Lentil Lines in the Western Regional Lentil Trials - 2005

Cultivar	Weight 100 Seeds	Water Uptake	Hard Seed	Conductivity	Post Soak Seed Color	Post Soak Bleach	Cooking Time	Post Cook Seed Color	Post Cook Broth Color	Seed Coat Separates	Cooked To Mush
	..g..	..%..	..%..	..us/g..		..%..	..minutes..				
PENNELL	6.25	123.5	0.0	62.40	G	0.0	20.0	1	5	N	N
LC860359L	6.58	112.3	0.0	65.35	G	0.0	18.7	1	5	Y	N
LC860616L	6.91	123.7	0.0	72.36	G	0.0	19.3	1	5	N	N
LC99600747L	6.69	122.6	0.0	67.26	G	0.0	19.3	1	5	N	N
LC99602075L	7.32	125.4	0.0	77.87	G	0.0	20.7	1	5	N	N
LC01600698L	7.33	126.3	0.0	62.76	G	0.0	19.3	1	5	N	N
MERRIT	6.34	124.4	0.3	53.80	G	0.0	26.0	1	4	Y - 30%	N
RICHLEA	5.03	114.7	0.0	69.58	G	0.0	26.7	1	4	Y - 30%	N
LC01600732R	5.35	113.2	2.0	47.71	G	0.0	26.7	1	4	Y - 30%	N
LC01600828R	5.03	115.5	0.0	59.64	G	0.0	26.7	1	4	Y - 10%	N
ESTON	2.75	112.0	0.0	72.73	G	0.0	21.3	1	4	Y - 20%	N
LC01600736E	3.54	114.7	0.3	53.82	G	0.0	21.3	1	4	N	N
LC01602307E	3.77	114.9	0.0	161.80	G	0.0	22.7	1	4	Y - 20%	N
LC02600698E	2.47	112.6	0.0	234.82	G	0.0	24.7	1	4	Y - 10%	N
PARDINA	4.04	109.5	3.7	43.70	G	0.0	26.7	1	4	Y - 20%	N
LC02600397P	3.66	101.5	7.7	44.38	G	0.0	26.0	1	4	Y - 20%	N
CRIMSON	3.22	113.8	0.7	50.00	G	0.0	27.3	1	4	N	N
LC01601751T	3.29	113.1	0.7	64.22	G	0.0	26.7	1	4	Y	N
LC01602062T	4.54	111.1	1.3	53.45	G	0.0	25.3	1	4	Y	N
LC02600449T	4.02	118.4	1.7	58.08	G	0.0	23.3	1	4	Y	N

Seed used for post harvest quality evaluations was grown at Pullman, WA in 2005.
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 43. Lentil variety performance results at Nezperce and Moscow, ID - 2005.
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	1270	1700	1490	5.0	5.7	5.4	17	14	16
Crimson	1190	1500	1350	3.0	3.2	3.1	16	13	15
Eston	1220	1550	1390	2.9	3.2	3.1	17	14	16
Merrit	1200	1700	1450	5.5	5.9	5.7	17	15	16
Pardina	1240	1810	1525	3.3	3.7	3.5	16	13	15
Pennell	870	1160	1020	5.9	6.5	6.2	16	15	16
Richlea	1060	1570	1320	4.8	4.8	4.8	17	15	16
LC860359L	590	1040	820	6.1	6.3	6.2	17	16	17
LC860616L	960	1590	1280	6.4	6.8	6.6	17	15	16
LC99602075L	870	1150	1010	6.5	7.1	6.8	17	16	17
LC01600732R	1110	1470	1290	4.5	4.8	4.7	17	15	16
LC01600736E	910	1300	1110	3.3	3.5	3.4	17	15	16
LC01602307E	1350	1390	1370	3.9	4.0	4.0	18	14	16
LC02600397P	980	1380	1180	3.2	3.5	3.4	17	14	16
LC01602062T	1190	1830	1510	4.2	4.3	4.3	16	14	15
LC02600449T	630	1280	960	4.0	4.1	4.1	15	15	15
Average	1040	1460	1260	4.5	4.8	4.7	17	15	16
LSD (0.10)	190	80	90	0.2	0.2	0.1	1	1	1
CV (%)	15	4	--	2.7	2.5	--	5	5	--

Table 44. Seed yield averages for lentil varieties tested for three years in northern Idaho. Data from Stephen Guy, University of Idaho.

Variety or Selection	2003	2004	2005	Average
	----------	lb/acre	----------	
Lentil				
Brewer	1290	2850	1490	1870
Crimson	1070	2100	1350	1510
Eston	1230	2470	1390	1690
Merrit	1290	2820	1450	1850
Pardina	1430	2850	1530	1940
Pennell	1260	2060	1020	1450
Richlea	1430	2570	1320	1773
LC860359L	1430	1950	820	1400
LC99602075L	1470	2360	1010	1610
Average	1320	2450	1264	1680
LSD (0.10)	180	270	90	--

Table 45. No-till lentil variety performance results at Genesee and Moscow - 2005.
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	1380	960	1170	5.6	5.1	5.4	16	16	16
Eston	1180	900	1040	3.1	3.0	3.1	16	16	16
Merrit	1340	1100	1220	6.1	5.6	5.9	16	16	16
Pardina	1570	1300	1440	3.8	3.7	3.8	15	16	16
Pennell	1430	1300	1370	6.3	5.9	6.1	16	16	16
Richlea	1240	1310	1280	4.7	4.5	4.6	17	16	17
Average	1360	1150	1260	4.9	4.6	4.8	16	16	16
LSD (0.10)	170	440	220	0.2	0.2	0.1	1	1	1
CV (%)	10	31	--	2.4	3.2	--	4	6	--

Table 46. Western Regional Lentil Yield Trial at Kalispell, MT - 2005
Data from Duane Johnson and Louise Strang, Montana State University.

Cultivar	Entry	CotyledonColor	Type	Yield	SeedWt
				lbs/a	#/lb
Pennell	1	Yellow	Laird Type	391	7187
LC860359L	2	Yellow	Laird Type	546	7235
LC860616L	3	Yellow	Laird Type	544	6604
LC99600747L	4	Yellow	Laird Type	450	7358
LC99602075L	5	Yellow	Laird Type	428	6592
LC01600698L	6	Yellow	Laird Type	341	8005
Merrit	7	Yellow	Brewer Type	355	7843
Richlea	8	Yellow	Richlea Type	458	9382
LC01600732R	9	Yellow	Richlea Type	639	9710
LC01600828R	10	Yellow	Richlea Type	756	9351
Eston	11	Yellow	Eston Type	638	13163
LC01600736E	12	Yellow	Eston Type	714	12032
LC01602307E	13	Yellow	Eston Type	834	10702
LC02600698E	14	Yellow	Eston Type	512	13015
Pardina	15	Yellow	Pardina Type	1122	12356
LC02600397P	16	Yellow	Pardina Type	450	13061
Crimson	17	Red	Crimson Type	755	14077
LC01601751T	18	Red	Turkish Red Type	443	13639
LC01602062T	19	Red	Turkish Red Type	558	9982
LC02600449T	20	Red	Turkish Red Type	422	11338
			mean	521.7	8705
			LSD(0.05)	NS	1101
			Pr>F	0.101	< 0.0001

Fertilizer: 22 lbs N/a , 104 lbs P2O5/a
Herbicide: Assure II
Seeded 4/18/05 in R8.
Seeding rate: 8.3 seeds/ft

Table 47. Western Regional Lentil Trial - Dry-land lentil agronomic summary. Exp. 860705, Central Ag Research Center, Moccasin, MT - 2005. Data from Chengci Chen and Karnes Neill.

		Grain Harvest				
		Grain Yield			Grain Weights	
Selection	Plant Height	@ Harvest	Moisture	@ 12%	Test	Kernel
	cm	lbs/acre	%	lbs/acre	lbs/bu	g/1,000
LC01602062T	27.0	**976.5** [a]	14.3 [a]	**951.1** [a]	63.5	44.6
Pennell	27.5	938.7 [a]	12.3	936.6 [a]	58.6	64.4
Pardina	24.5	961.4 [a]	15.0 [a]	927.2 [a]	64.3	38.5
LC02600698E	25.8	931.0 [a]	12.9	925.1 [a]	64.9 [a]	28.0
LC01600405T	25.8	908.7 [a]	14.4 [a]	883.0 [a]	64.0	42.5
LC860616L	29.0	882.8 [a]	13.1	869.4 [a]	58.6	72.3 [a]
LC01600736E	28.0	885.1 [a]	14.0 [a]	868.0 [a]	62.9	36.8
Eston	25.5	878.0 [a]	13.0	865.2 [a]	63.9	32.0
Merrit	29.0	872.5 [a]	14.5 [a]	845.0 [a]	59.0	62.4
LC01600698L	28.3	843.0 [a]	12.8	839.6 [a]	58.8	67.1
LC9900747L	**33.0** [a]	865.5 [a]	14.9 [a]	835.3 [a]	59.3	67.3
LC01602245P	24.3	846.4 [a]	13.9 [a]	828.4 [a]	64.6 [a]	38.3
LC01602307E	26.5	850.4 [a]	14.7 [a]	826.9 [a]	62.9	44.3
LC01601640P	24.3	843.2 [a]	14.5 [a]	818.2 [a]	63.3	38.2
LC01600732R	28.8	812.5 [a]	11.9	813.8 [a]	61.5	48.3
Brewer	29.3	826.5 [a]	13.9 [a]	809.3 [a]	59.5	56.8
LC99602075L	31.0 [a]	810.1 [a]	12.7	806.0 [a]	58.9	**73.3** [a]
Crimson	25.0	820.7 [a]	13.7 [a]	804.4 [a]	64.1	31.9
LC01600828R	27.0	809.1 [a]	**16.1** [a]	771.1 [a]	61.9	46.4
LC01601751T	29.3	779.6 [a]	13.6	766.3 [a]	**65.3** [a]	32.4
CDC Richlea	29.0	787.6 [a]	15.0 [a]	761.5 [a]	60.2	51.2
LC02600397P	27.0	757.5	13.9 [a]	744.3 [a]	64.3	33.5
LC860359L	28.5	706.4	12.7	700.6	60.1	60.7
LC02600449T	25.0	593.6	12.1	593.0	63.7	42.5
Mean (n = 96)	27.4	841.1	13.8	824.5	62.0	48.0
LSD (0.05 by t)	2.6	213.2	2.5	214.0	0.8	1.8
CV% (s/means)	6.7	18.0	13.0	18.4	1.0	2.6
F-Value (23,69 df)	5.88	1.20 [n]	1.40 [n]	1.10 [n]	64.10	492.9

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

[n] - Denotes not statistically significant at 0.05 level.

Table 48. NDSU Carrington Research Extension Center Western Regional Lentil Variety Trial at Carrington - 2005. Data from Blaine Schatz and Steve Zwinger, North Dakota State University.

Variety	Market Class	Days to Bloom	1000 KWT	Seeds / Pound	Test Weight	Seed Yield
			gms		lbs/bu	lb/acre
Crimson	Crimson	43.7	32.9	13,802	62.5	1918
Eston	Eston	40.7	32.5	13,960	62.3	1660
LC01600698L	Laird	44.0	65.1	6,980	58.5	1257
LC01600732R	Richlea	43.3	48.5	9,377	60.5	1323
LC01600736E	Eston	41.7	36.9	12,320	62.1	1927
LC01600828R	Richlea	46.3	44.3	10,260	61.1	1192
LC01601751T	Turkish Red	46.3	33.6	13,525	61.9	1347
LC01602062T	Turkish Red	37.7	43.8	10,360	61.6	1776
LC01602307E	Eston	44.0	42.1	10,777	61.5	1798
LC02600397P	Pardina	47.0	34.5	13,167	63.2	1669
LC02600449T	Turkish Red	44.3	40.8	11,148	61.1	912
LC02600698E	Eston	42.7	29.1	15,640	63.3	1730
LC860359L	Laird	49.0	62.0	7,336	60.5	1442
LC860616L	Laird	39.7	65.8	6,899	58.7	1548
LC99600747L	Laird	41.3	55.2	8,231	59.1	1133
LC99602075L	Laird	42.3	73.6	6,175	58.7	1095
Merrit	Brewer	37.3	61.3	7,407	59.3	1885
Pardina	Pardina	38.0	36.2	12,575	63.3	1702
Pennell	Laird	43.0	67.2	6,759	58.7	1527
Richlea	Richlea	44.0	47.8	9,493	60.4	1592
MEAN		42.8	47.7	10,310	60.9	1522
C.V.%		3.6	3.2	3.0	0.5	14.0
LSD.05		2.5	2.5	517	0.5	351
LSD.01		3.4	3.3	692	0.7	470
#REPS		3	3	3	3	3

Planting Date = May 17 ; Harvest Date = August 23 ; Previous Crop = Durum

Table 49. NDSU Carrington Research Extension Center Lentil Variety Trial - 2005.
Data from Blaine Schatz and Steve Zwinger, North Dakota State University.

Variety	Market Class	Days to Bloom	1000 KWT	Seeds / Pound	Test Weight	Seed Yield
			gms		lbs/bu	lb/acre
CDC Blaze	Small	40.5	30.6	14831	62.8	1635
CDC Gamis	Large	43.0	55.7	8171	60.1	1583
CDC LeMay	French	44.8	30.7	14802	62.6	2327
CDC Milestone	Small	40.5	31.6	14357	61.5	1605
CDC Redberry	Small	40.3	38.5	11786	61.5	2078
CDC Richlea	Medium	42.8	48.9	9286	60.6	1925
CDC Rouleau	Small	40.8	33.6	13534	60.9	1672
CDC Sedley	Large	39.8	63.3	7208	59.5	1304
CDC Sovereign	Large	43.5	60.9	7460	60.7	1616
CDC Viceroy	Small	41.5	30.1	15103	62.6	2060
Crimson	Small	42.3	35.6	12766	62.4	2465
Laird	Extra Large	47.0	56.0	8123	59.4	749
Merritt	Medium	37.3	57.4	7942	58.7	1257
Pardina	Small	38.0	28.6	15954	61.0	797
Pennell	Extra Large	41.5	64.0	7113	58.7	1460
Red Robin	Small	38.8	25.2	18023	63.5	1924

Table 50. Western Regional Lentil Yield Trial – 0598 – No-Till at Hettinger, ND - 2005.
Data from Eric Eriksmoen, North Dakota State University .

Cultivar	Days to Bloom	Duration of Bloom	Days to Mature	Plant Height	Lodg.	Ht. Index	1000 Seed wt.	Test Weight	Seed Yield
		days		cm	0-9*	**	grams	Lbs/bu	lbs/Ac
Pennell	75	17	106	22	2.7	0.74	56.0	56.5	867
LC860359L	76	16	108	24	2.7	0.72	56.8	57.7	722
LC860616L	74	18	109	20	3.7	0.58	54.4	55.4	633
LC99600747L	75	18	106	20	3.0	0.65	50.1	55.8	633
LC99602075L	75	15	106	19	6.3	0.61	51.5	55.6	467
LC01600698L	75	16	106	21	3.0	0.60	54.0	55.4	867
Merrit	72	20	105	24	3.3	0.76	49.9	56.2	711
Richlea	75	18	107	19	2.3	0.65	47.2	57.3	800
LC01600732R	76	17	108	20	2.0	0.65	44.7	58.0	467
LC01600828R	76	17	108	17	4.7	0.53	48.3	58.1	845
Eston	74	16	104	18	2.0	0.74	29.5	58.7	567
LC01600736E	76	16	105	20	2.0	0.63	32.8	59.6	500
LC01602307E	75	18	107	19	6.0	0.57	39.6	58.4	856
LC02600698E	76	16	105	22	3.3	0.70	26.4	60.6	689
Pardina	73	18	107	19	5.7	0.84	35.2	61.8	911
LC02600397P	76	15	107	15	4.7	0.48	33.1	60.2	711
Crimson	73	18	103	20	5.3	0.79	32.0	60.3	722
LC01601751T	74	17	105	15	4.0	0.50	32.3	59.3	533
LC01602062T	73	18	105	15	3.7	0.53	38.1	59.1	1056
LC02600449T	75	16	106	14	4.0	0.54	36.0	58.9	378
Trial Mean	75	17	106	19	3.7	0.64	42.4	58.1	697
C.V. %	1.0	7.6	2.1	22.0	31.4	29.3	5.1	1.0	10.8
LSD .05	1	2	NS	NS	1.9	NS	3.6	1.0	124
LSD .01	2	3	NS	NS	2.6	NS	4.8	1.3	166

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

** Height Index: Mature plant height / green plant height.

Planting Date: April 6, 2005

Harvest Date: August 5, 2005

Previous Crop: barley.

Table 51. Western Regional Lentil Variety Trial, North Central Research Extension Center at Minot, ND - 2005. Data from Mark Halvorson, North Dakota State University.

Variety	Days to Flower	Plant Height	Seed Weight	Test Weight	Seed Yield 2003	2004	2005	2 Year	3 Year
	DAP	in	g/1000	lb/bu	----------lb/A----------				
Pennell	51	6	72.0	59.7	1871	1743	1927	1835	1847
LC860359L	53	7	68.8	60.7	1431	1719	2054	1886	1735
LC860616L	51	8	74.5	59.4	--	1320	1779	1550	--
LC99600747L	51	8	66.8	60.2	--	--	2064	--	--
LC99602075L	50	6	74.5	59.4	1121	1214	1886	1550	1407
LC01600698L	51	6	75.3	59.1	--	--	2041	--	--
Merrit	50	6	65.0	59.6	1598	1187	1644	1415	1476
Richlea	51	8	55.3	60.7	--	--	2490	--	--
LC01600732R	51	9	54.0	61.5	--	--	2340	--	--
LC01600828R	53	5	51.5	61.6	--	--	1416	--	--
Easton	50	8	32.8	63.2	--	--	2289	--	--
LC01600736E	53	8	37.0	62.5	--	--	1873	--	--
LC01602307E	50	7	46.3	62.1	--	1764	2451	2108	--
LC02600698E	51	8	31.0	63.8	--	--	2330	--	--
Pardina	51	4	37.3	64.0	--	--	1085	--	--
LC02600397P	54	6	35.3	63.8	--	--	1834	--	--
Crimson	51	7	37.5	63.1	--	--	1296	--	--
LC01601751T	54	6	36.0	63.4	--	--	1553	--	--
LC01602062T	51	5	38.5	61.9	--	948	1488	1218	--
LC02600449T	52	6	41.8	62.0	--	--	754	--	--
LSD 5%	1	2	5.5	0.4	266	435	413	--	--
C.V.%	1.5	23.4	5.1	0.5	13.4	27.5	16.1	--	--
Mean	51	6	51.5	61.6	1365	1093	1814	--	--

DAP=Days after planting
Planting Date: May 3, 2005
Harvest Date: September 12, 2005

Table 52. Western Regional Lentil Yield Trial, Williston Research Extension Center - 2005.
Data from Neil Riveland, North Dakota State University.

Cultivar	Days to Bloom	Canopy Height		Test Weight	1000 KWT	Seeds/ pound	Seed Yield	Seed Yield
		cms	inches	lbs/b	gms		lbs/acre	bus/acre
Pennell	62.5	30	11.8	59.2	72.6	6247	1480.2	24.67
LC860359L	63.8	31.8	12.5	61	74.6	6078	1604.4	26.74
LC860616L	59.8	32.8	12.9	59.5	77.9	5826	1674.5	27.91
LC99600747L	58	28.8	11.3	60.1	75	6046	1482.7	24.71
LC99602075L	59	30.5	12	59.2	82.5	5496	1517	25.28
LC01600698L	60	30	11.8	59	79.5	5706	1467.4	24.46
Merrit	57.8	27	10.6	59.6	67.5	6717	1335.7	22.26
Richlea	60	31	12.2	61.5	57.3	7920	1672.6	27.88
LC01600732R	62.3	27.5	10.8	61.8	56.9	7975	1706.8	28.45
LC01600828R	64.3	24.8	9.7	62.1	55.3	8207	1716.1	28.6
Eston	58	25.5	10	63.5	34.7	13070	1489.4	24.82
LC01600736E	63.5	24.5	9.6	63.4	41.3	10978	1404.1	23.4
LC01602307E	59.5	28.8	11.3	62.7	48.9	9280	1746.9	29.11
LC02600698E	61.5	25.3	9.9	64.2	32.7	13868	1512.8	25.21
Pardina	57.5	20.8	8.2	64.2	42.5	10663	1383	23.05
LC02600397P	64.3	25.3	9.9	64.2	39.9	11374	1504	25.07
Crimson	59	24.5	9.6	63.2	34.4	13173	1453.4	24.22
LC01601751T	63.3	25.8	10.1	64.7	39.1	11595	1137.4	18.96
LC01602062T	59.3	23.3	9.2	63.4	47.2	9613	1336.3	22.27
LC02600449T	64.3	24.5	9.6	63.7	47.8	9489	1107.9	18.47
HIGH MEAN	64.3	32.8	12.9	64.7	82.5	13868	1746.9	29.11
LOW MEAN	57.5	20.8	8.2	59	32.7	5496	1107.9	18.47
EXP MEAN	60.9	27.1	10.7	62	55.4	8966	1486.6	24.78
C.V. %	2.5	12.2	12.2	0.4	1.6	2	10	10.02
LSD 5%	2.2	4.7	1.8	0.5	1.8	338	211	3.52
LSD 1%	2.9	6.2	2.5	0.7	2.5	462	280.5	4.68
# OF REPS	4	4	4	2	2	2	4	4
F-TRT	9.8	3.8	3.8	148.8	777.4	580	5.5	5.54

Location of the WREC: Latitude 48 8'; Longitude 103 44'W; Elevation 2105 ft.
Planted: April 23 on Fallow. Applied Fertilizer in lbs/a: 0N:0P2O5:0K:
Soil Test to two feet in lbs/a: 91N:19P:300K:106S 2.0 OM pH-6.5
Soil Type: Williams-Bowbells Loam
Harvested: August 6 Harvested Area: 60 ft2
Trifluralin at 1.0 lbs/a ai PPI in the fall of 2004 gave good weed control.

Table 53. Western Regional Lentil Yield Trial, Milton Freewater, OR - 2005 (0598).
Data from USDA-ARS, Pullman, WA.

Cultivar	Origin	Market Type	Cotyledon Color	Seed Yield	% Check
				..kg/ha..	
PARDINA		P	Y	959	118
*MERRIT		B	Y	814	100
LC01602062T	X96L057	T	R	796	98
CRIMSON		c	R	717	88
LC99600747L	X95L078	L	Y	709	87
LC02600397P	X98L033	P	Y	644	79
RICHLEA		R	Y	643	79
ESTON		E	Y	622	76
LC860616L	X95L073	L	Y	601	74
LC01602307E	X98L047	E	Y	598	73
LC01600698L	X97L086	L	Y	594	73
LC01600732R	X98L011	R	Y	558	69
LC02600698E	X98L032	E	Y	520	64
LC99602075L	X96L092	L	Y	517	64
LC01601751T	X95L049	T	R	480	59
LC01600736E	X98L011	E	Y	468	58
PENNELL		L	Y	426	52
LC02600449T	X97L084	T	R	421	52
LC860359L	X93L035	L	Y	275	34
LC01600828R	X97L093	R	Y	227	28
Grand Mean				579	
C.V. (%)				10	
$LSD_{(\alpha=0.05)}$				77	

Planting date 4/15/2005. Harvest date 7/18/2005.
Leaf Type; B = Brewer Type, c = Crimson Type, E = Eston Type, L = Laird type, P = Pardina Type, R = Richlea Type,
T = Turkish Red Type.
Cotyledon Type; R = red, Y = Yellow.
Yield data are means of three replications.
* Check variety .

Table 54: Western Regional Lentil Yield Trial-0598, Powell, WY - 2005. Data from Abdel Mesbah, University of Wyoming.

Cultivar	Accession No.	Yield
		lbs/ac
------	LC99600747L	1554
------	LC01600698L	1785
Merrit	LC460266B	2353
Richlea	LC940001	2296
------	LC01600828R	1331
Eston	RS000001	2956
------	LC01600736E	2354
Pardina	LC920001	2997
------	LC02600397P	1844
Crimson	LC800024	2827
------	LC01601751T	1215
------	LC02600449T	1290
	Mean	2067
	C.V.%	26.2
	LSD (5%)	540

Planting date: June 4, 2005.
Harvest date: October 14, 2005.

Winter Lentil Trials

Eight winter lentil entries in the Western Regional Yield Trial were evaluated at 11 locations across four states. The entries comprised two checks, 'Morton', 'Toni', and six breeding lines. Data were collected from two locations (Tables 55 and 56), while the remaining locations suffered from poor stand establishment and/or severe winter kill and were abandoned in spring. Information regarding experimental design, location and specific observations for some of the locations are included below. Morton produced an average yield of 1278 lb/a, while to breeding lines produced average yields of 1259 lb/a (LC9979065) and 1203 lb/a (LC9979120).

Table 55. Summary of Locations Participating in the 2005 Winter Lentil Western Regional Yield Trial.

Location	Contact	Conditions	Nurseries		
			Seed Sent	Data Returned	Data Lost
		Montana			
Bozeman	Perry Miller	Dryland	✓		✓
Kalispell	Duane Johnson, Louise Strang	Dryland	✓	✓	
Moccasin	Chengci Chen, Karnes Neill	Dryland	✓	✓	
		North Dakota			
Carrington	Steve Zwinger, Blaine Schatz	Dryland	✓		✓
Hettinger	Eric Eriksmoen	Dryland	✓		✓
Minot	Mark Halvorson	Dryland	✓		✓
Williston	Neil Riveland	Dryland	✓		✓
		Oregon			
Pendelton	Stephen Machado	Dryland	✓		✓
The Dalles	Brian Tuck	Dryland	✓		✓
		Washington			
Almira	Adrian Higginbotham	Dryland	✓		✓
Grand Totals			10	2	8

Table 56. Location Yield Summary (lb/a) for Western Regional Winter Lentil Trials.

Location	LC9979065	LC9979120	LC9979062	LC9976079	LC9978094	LC9978057	Morton	Toni
Kalispell, MT	435	502	214	300	449	258	347	
Moccasin, MT	1259	1203	1128	1004	930	871	1278	784
Grand Mean	1259	1203	1128	1004	930	871	1278	784

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

Table 57. Western Regional Winter Lentil Yield Trial at Kalispell, MT – 2005.

Variety	Stand %	Flower *date*	Maturity *date*	Height *inches*	Yield *lbs/a*	Seed Size *#/lb*
WA8649041	77	6/2	8/3	**18.0**	278	16089
LC9976079	**83**	5/30	8/1	**16.0**	300	14246
LC9978057	**83**	5/28	7/19	14.5	258	15306
LC9978094	**79**	5/31	7/27	**18.5**	**449**	14345
Morton	**83**	5/29	7/22	**15.0**	347	15404
LC9979062	**81**	5/30	8/3	**15.0**	214	15000
LC9979065	**80**	6/1	8/3	14.0	**435**	15282
LC9979120	75	5/31	7/27	**16.0**	**502**	**17940**
mean	80			15.9	347.7	15452
LSD(0.05)	5			3.6	149	839
Pr>F	0.039			0.099	0.006	< 0.0001

Seeded 10/5/04.
Stands: 5/2/05
Harvested: 8/17/05
Fertilizer: 13 lbs N + 62 lbs P_2O_5 /a - Fall, 2004
Herbicide: Assure II (6oz/a) - 5/17/05

Table 58. Western Regional Winter Lentil Trial – Dryland winter lentil agronomy results. Exp. 840705, Central Ag Research Center, Mocassin, MT - 2005. Data from Chengci Chen and Karnes Neill.

		Dry Matter		----------Dry Pea Grain Production----------				
Entry	Spring Density	Height	Yield	Height	Stand	Test Wt	Moisture	Yield
	#/ft^2	in	lbs/acre	in	index	lbs/bu	%	lbs/acre
Morton	9.8 [a]	12.4	2,593 [a]	12.3	0.992	65.6 [a]	8.8	**1,278 [a]**
LC9979065	10.1 [a]	11.7	2,511	11.0	0.943	65.6 [a]	8.7	1,259 [a]
LC9979120	8.3	12.3	2,666 [a]	11.8	0.954	**65.9 [a]**	9.1 [a]	1,203 [a]
LC9979062	10.5 [a]	13.6	3,001 [a]	13.0 [a]	0.962	64.9	8.8	1,128 [a]
LC9976079	8.3	12.7	2,407	13.0 [a]	**1.027 [n]**	64.7	**9.6 [a]**	1,004
LC9978094	**10.6 [a]**	13.8 [a]	2770 [a]	12.7	0.927	65.6 [a]	9.3 [a]	930
LC9978057	10.3 [a]	12.8	**3,223 [a]**	12.6	0.990	65.4	8.8	871
WA8649041	9.8 [a]	**14.8 [a]**	2,291	14.2 [a]	0.972	65.4	9.4 [a]	819
Toni	10.4 [a]	14.7 [a]	2,283	**14.3 [a]**	0.978	65.3	9.2 [a]	784
Means (n = 36)	9.8	13.2	2,638	12.8	0.972	65.4	9.1	1,031
LSD (t = 0.05)	2.1	1.1	673	1.4	0.123	0.4	0.5	176
CV% (s/mean)	14.7	5.5	17.5	7.6	8.7	0.4	3.9	11.7
F-value	1.52	8.78	1.9	4.8	0.5	8.29	3.13	10.11

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

[n] - Denotes not statistically significant at 0.05 level.

Chickpea Trials

Ten chickpea entries in the Western Regional Chickpea Yield Trial were evaluated at 14 locations across nine states. The entries comprised three checks, 'Dwelley', 'Sierra', and 'Dylan' (CA9990I604C) and seven breeding lines including four Café and three Spanish white types. The trials were conducted under dryland conditions at all locations. Information regarding experimental design, location and specific observations for some of the locations are included below. The three checks, Dwelley, Sierra and dylan, produced aveage seed yields of 851, 925 and 931 lb/a, respectively. The highest yielding line in the trial was CA0090B347C (1160 lb/a), a café type, and CA0090I875W, a Spanish white type proposed for release, produced average seed yield of 791 lb/a.

Table 59: Summary of Locations Participating in the 2005 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	✓	✓	
Sidney	David Baltensperger, Glen Frickel	Dryland	✓	✓	
		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	✓	✓	
		South Dakota			
Hayes	John Rickertsen	Dryland	✓	✓	
		Wyoming			
Powell	Abdel Mesbah	Dryland	✓	✓	
Grand Totals			14	12	2

Table 60. Location Yield Summary (lb/a) for Western Regional Chickpea Trials.

Location	CA9783163C	CA9990B1579C	Dylan	CA9990I604C	CA0090B347C	CA0190B839C	CA9890233W	CA0090I875W	CA0090B015W	Dwelley	Sierra
Yellow Jacket, CO	443	729	660	850	674	471	490	530	772	672	
Moscow, ID	430		530	830		360	330	440	220	480	
Moccasin, MT	429	501	491	663	341	317	459	588	388	680	
Box Butte, NE	1270	1120	940	1500	700	1130	1000	990	1040	1110	
Sidney, NE	280	370	180	710	140	370	350	300	280	280	
Carrington, ND	2146	2134	2214	1936	1768	1903	1614	1787	1727	2013	
Hettinger, ND	928	1192	1124	1535	941	1124	976	913	1142	798	
Minot, ND	116	364	63	1199	44	167	100	130	93	266	
Williston, ND	1069	1279	1614	1145	1056	982	1059	1109	1157	1300	
Milton Freewater, OR	333	457	744	543	357	214	307	363	188	502	
Hayes, SD	1159	958	1071	1333	1159	1054	1054	1141	1150	1019	
Powell, WY	1077	2136	1143	1347	895	1010	1296	1395	1427	1539	
Grand Mean	841	1022	931	1160	734	795	791	841	851	925	

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

Table 61. Post Harvest Quality Evaluations of Kabuli Chickpea Lines in the Western Regional Chickpea Trials – 2005.

Cultivar	Weight 100 Seeds	Water Uptake	Hard Seed	Conductivity	Post Soak Seed Color	Post Soak Bleach	Cooking Time	Post Cook Seed Color	Post Cook Broth Color	Seed Coat Separates	Cooked To Mush
	..g..	..%..	..%..	..us/g..		..%..	..minutes..				
DWELLEY	41.74	117.4	0.0	40.25	G	0.0	25	1.0	5.0	N	N
SIERRA	46.49	108.7	0.0	42.80	G	0.0	28	1.0	5.0	N	N
CA9783163C	48.16	118.8	0.0	29.28	G	0.0	28	1.0	5.0	N	N
CA9990B1579C	45.96	110.8	0.0	45.69	G	0.0	29	1.0	5.0	N	N
CA9990I604C	47.61	118.3	0.0	32.56	G	0.0	25	1.0	5.0	N	N
CA0090B347C	38.53	114.2	0.0	43.08	G	0.0	27	1.0	5.0	N	N
CA0190B839C	44.53	120.7	0.0	55.69	G	0.0	29	1.0	5.0	N	N
CA9890233W	40.45	135.7	0.0	43.76	G	0.0	27	1.0	5.0	N	N
CA9990I875W	45.36	129.1	0.0	41.45	G	0.0	27	1.0	5.0	N	N
CA0090B015W	40.44	131.5	0.0	49.21	G	0.0	28	1.0	5.0	N	N

Seed used for post harvest quality evaluations was grown at Pullman, WA in 2005.
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 62. Western Regional Dryland Chickpea Variety Trial1, Southwestern Colorado Research Center at Yellow Jacket, CO - 2005. Data from Mark Stack.

Entry	Yield	Maturity [2]	Notes
	lbs/ac		
CA0090B347C	850	same	upright, med. size plant, good pod load.
Dwelley	772	earlier	
CA188587C	760	later	small size plant, green at harvest.
CA9990B1579C	729	same	good pod load.
CA0190B839C	674	later	large size plant, green at harvest.
Sierra	672	0	
CA9990I604C	660	same	small size plant.
CA9990I895C	603	earlier	upright, good pod load.
CA0090B015W	530	later	prostrate plant, green at harvest.
CA0090I875W	490	later	prostrate plant, green at harvest.
CA9890233W	471	later	prostrate plant, green at harvest.
CA9783163C	443	later	poor pod load, green at harvest.
Average	638		
CV%	20		
$LSD_{0.05}$	184		

[1] Trial conducted at the Southwestern Colorado Research Center; seeded 6/2/05, cut 10/15/05, and threshed 11/4/05

[2] Maturity relative to Sierra.

Table 63. Chickpea variety performance results at Moscow, ID - 2005.
Data from Stephen Guy, University of Idaho.

Variety or Selection	Seed Yield	Seed Weight	Plant Height
	lb/acre	g/100	inches
Dwelley	220	31.0	17
Myles	800	15.3	15
Sierra	480	34.1	17
Spanish White	640	36.4	16
CA9783163C	430	33.2	16
CA9990I604C	530	36.4	16
CA0090B347C	830	33.2	17
CA9890233W	360	29.5	15
CA9990I875W	330	29.3	14
CA9990B015W	440	29.4	15
Average	510	30.8	16
LSD (0.10)	70	1.7	1
CV (%)	10	4.6	4

Table 64. Seed yield averages for chickpea varieties tested for three years in northern Idaho. Data from Stephen Guy, University of Idaho.

Variety or Selection	2003	2004	2005	Average
	----------lb/acre----------			
Chickpea				
Dwelley	1180	2130	220	1180
Myles	1440	2540	800	1590
Sierra	1390	2460	480	1440
Spanish White	1380	2100	640	1370
CA 9990I604C	1400	3010	530	1650
CA 9890233W	1150	2860	360	1460
CA9990I875W	850	2470	330	1220
Average	1260	2510	480	1420
LSD (0.10)	180	410	70	--

Table 65. Western Regional Chickpea Trial - Dry-land chickpea agronomic summary. Exp. 890795, Central Ag Research Center, Moccasin, MT - 2005. Data from Chengci Chen and Karnes Neill.

		Grain Harvest				
		Grain Yield			Grain Weights	
Selection	Plant Height	@ Harvest	Moisture	@ 12%	Test	Kernel
	cm	lbs/acre	%	lbs/acre	lbs/bu	g/1,000
Sierra	37.3	**679.5** [a]	8.58 [a]	**705.0** [a]	57.4 [a]	413.9 [a]
CA0090B347C	33.0	662.9 [a]	**8.93** [a]	686.0 [a]	**58.4** [a]	394.5 [a]
CA0090B015W	30.0	588.3 [a]	8.55 [a]	611.0 [a]	41.9	373.1
Myles	26.3	538.2 [a]	8.58 [a]	559.0 [a]	57.4 [a]	148.9
CA9990B1579C	37.3	500.5 [a]	8.70 [a]	519.5 [a]	55.4 [a]	417.7 [a]
CA0090B659D	**42.0** [a]	490.4 [a]	7.63	514.8 [a]	54.7 [a]	212.8
CA9990I604C	30.3	490.7 [a]	8.35	511.3 [a]	55.0 [a]	411.8 [a]
CA0090I875W	27.8	458.5 [a]	8.70 [a]	474.3 [a]	51.5 [a]	431.8 [a]
CA9783163C	30.0	428.6 [a]	8.50	445.5 [a]	54.6 [a]	402.3 [a]
Dwelley	34.3	387.5	8.73 [a]	401.5	55.7 [a]	409.2 [a]
CA0190B839C	39.5 [a]	341.0	8.53 [a]	354.3	41.8	**435.5** [a]
CA9890233W	28.8	317.4	8.20	331.0	51.2 [a]	371.3
Mean (n = 48)	33.0	490.3	8.50	509.4	52.9	368.6
LSD (0.05 by t)	3.5	259.3	0.42	267.0	15.4	41.7
CV% (s/means)	7.3	36.8	3.40	36.4	20.2	7.9
F-Value (11,33 df)	17.14	1.62	5.18	1.64	1.09	39.35

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

[n] - Denotes not statistically significant at 0.05 level.

Table 66. Nebraska Dryland Chickpeas – 2005.
Data from David Baltensperger and Glen Frickel, University of Nebraska.

	AVERAGE OF TWO DRYLAND TRIALS			BOX BUTTE			SIDNEY
ENTRY	YIELD	Ascochyta	Seed Weight	YIELD	Ascochyta	Seed Weight	YIELD
	Lbs/Acre	1-5	(milligrams)	Lbs/Acre	1-5	(milligrams)	Lbs/Acre
CA0090B347C	1110	2.4	410	1500	2.4	410	710
CA9783163C	780	1.9	450	1270	1.9	450	280
CA9890233W	750	2.1	480	1130	2.1	480	370
CA9990B1579C	740	2.0	480	1120	2.0	480	370
Sierra	700	2.3	450	1110	2.3	450	280
B90	690	1.9	290	1200	1.9	290	180
CA0090I875W	670	2.1	480	1000	2.1	480	350
Dwelley	660	1.8	460	1040	1.8	460	280
CA0090B015W	650	2.8	480	990	2.8	480	300
PI Bulk	650	3.0	220	990	3.0	220	310
PI 17256	650	2.5	370	1100	2.5	370	200
Wy 202	590	3.6	210	870	3.6	210	300
Wy 203	560	3.9	400	780	3.9	400	350
CA9990I604C	560	2.6	530	940	2.6	530	180
CA0190B839C	420	2.3	460	700	2.3	460	140
Wy 201	380	4.0	200	560	4.0	200	200
Average	660	2.6	400	1020	2.6	400	300
LSD (.05)		.		330	0.6	50	140

Table 67. NDSU Carrington Research Extension Center Western Regional Chickpea Nursery - 2005.
Data from Blaine Schatz and Steve Zwinger, North Dakota State University.

Variety	Market Class	Leaf Type	Days to Flower	Plant Height	Disease	Seed Size > 9 mm	Seed Size > 8 mm	Seed Size > 7 mm	1000 KWT	Seeds / Pound	Test Weight	Seed Yield
				cm	%	%	%	%	gms		lbs/bu	lbs/ac
CA0090B015W	White	Compound	53.0	33	9	88	7	4	561	810	60.0	1787
CA0090B347C	Café'	Simple	49.7	42	29	59	35	5	451	1007	62.5	1936
CA0090I875W	White	Compound	53.0	37	3	97	2	0	633	718	59.3	1614
CA0190B839C	Café'	Simple	51.7	44	9	93	5	1	614	740	61.5	1768
CA9783163C	Café'	Compound	51.7	46	18	92	6	1	574	792	60.0	2146
CA9890233W	White	Compound	52.7	36	6	96	3	1	598	760	59.1	1903
CA9990B1579C	Café'	Simple	51.3	44	13	90	8	2	530	857	60.9	2134
CA9990I604C	Café'	Compound	51.3	39	19	94	4	1	576	790	60.1	2214
Dwelly	Café'	Simple	51.0	46	23	87	12	1	530	857	62.9	1727
Sierra	Café'	Simple	50.0	44	23	88	10	2	514	884	61.2	2013
MEAN			51.5	41.1	15.1	88.3	9	1.9	558	821	60.7	1924
C.V.%			0.7	10.7	43.6	3.1	25	33	4	3.9	1	7.4
LSD.05			1.5	7.6	11.3	4.7	6.2	1.1	38.7	54.7	1.1	245
LSD.01			2	NS	15.5	6.4	8.4	1.4	53	74.9	1.5	336
#REPS			3	3	3	3	3	3	3	3	3	3

Planting Date = May 19 ; Harvest Date = October 10 ; Previous Crop = Durum

** CA9990I604C now released as Dylan

** 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 plot severities are scored based on both incidence and severity

Table 68. Western Regional Chickpea Nursery at Hettinger, North Dakota, No-Till - 2005.
Data from Eric Eriksmoen, North Dakota State University.

Cultivar	Days to Bloom	Duration of Bloom	Days to Mature	Plant Height	Ht. Index	Disease	1000 Seed wt.	Test Weight	Seed Size >9mm	Seed Size 8-9mm	Seed Size <8mm	Seed Yield
		days		cm	*	0-9**	grams	Lbs/bu	%	%	%	lbs/Ac
Dwelley	78	10	116	47	0.84	2.7	401	59.8	47	37	16	1142
Sierra	76	11	116	50	0.93	4.0	393	59.2	41	40	19	798
CA9783163C	78	10	117	48	0.92	2.3	287	56.4	31	38	31	928
CA9990B1579C	76	11	116	50	0.96	4.0	401	57.8	50	34	16	1192
CA99901604C	75	13	118	43	0.98	1.7	378	54.6	54	32	14	1124
CA0090B347C	76	12	113	43	0.90	4.0	366	60.1	27	53	20	1535
CA0190B839C	77	10	117	49	0.93	2.7	368	58.7	46	37	17	941
CA9890233W	78	10	118	45	0.88	2.0	353	55.3	41	39	20	1124
CA00901875W	78	9	118	46	0.94	2.3	405	55.6	44	37	19	976
CA0090B015W	77	10	116	42	0.97	3.3	310	57.3	28	45	27	913
Trial Mean	77	11	117	46	0.92	2.9	366	57.5	41	39	20	1067
C.V. %	1.0	10.7	1.3	7.0	9.9	31.7	5.3	1.2	23.3	15.6	23.8	8.6
LSD .05	1	2	3	6	NS	1.6	33	1.2	16	11	8	157
LSD .01	2	NS	NS	NS	NS	NS	46	1.7	NS	NS	11	215

Planting Date: April 6, 2005
Harvest Date: August 31, 2005
Previous Crop: barley.
* Height Index: Mature plant height / green plant height.
** Disease (Ascochyta Blight): 0 = none, 9 = plants completely dead.

Table 69. North Central Research Extension Center. Western Regional Chickpea Variety Trial at Minot- 2005.
Data from Mark Halvorson, North Dakota State University.

Variety	Days to 10% Flower	Days to 90% Flower	Lodge	Disease	Plant Height	Test Weight	Seed Yield 2003	2004	2005	2 Year	3 Year
	DAP	DAP	0-9	0-9	in	lb/bu	----------lb/A----------				
Dwelley	54	68	7	8	29	--	3535	666	93	380	1431
Sierra	51	68	5	5	29	56.5	3065	661	266	463	1331
CA9783163C	54	69	5	5	29	--	--	--	116	--	--
CA9990B1579C	52	68	3	6	29	56.8	--	--	364	--	--
CA9990I604C	48	70	5	5	25	--	3260	682	63	373	1335
CA0090B347C	51	70	4	1	28	57.3	--	--	1199	--	--
CA0190B839C	54	69	6	8	28	--	--	--	44	--	--
CA9890233W	54	70	4	2	29	53.7	2544	650	167	409	1120
CA0090I875W	54	70	4	3	27	--	--	--	100	--	--
CA0090B015W	53	70	6	5	25	--	--	--	130	--	--
LSD 5%	2	1	1	1	NS	--	421	NS	157	--	--
C.V.%	2.2	1.3	21.5	19.2	13.4	--	9.2	19.8	42.4	--	--
Mean	52	69	5	5	28	24.8	3125	703	254	--	--

DAP=Days after planting
Lodging score based on scale 0-9 (0 = upright, 9 = flat)
Disease score based on scale 0-9 (0 = no disease 9 = disease)

Table 70. Chickpea Variety Trial, North Central Research Extension Center at Minot, ND - 2005.
Data from Mark Halvorson, North Dakota State University.

Variety	Seeding Rate	Days to Bloom	Lodge	Disease	Plant Height	Seed Weight	Test Weight	Seed Yield 2003	2004	2005	2 Year	3 Year
		DAP	0-9	0-9	in	g/1000	lb/bu	----------lb/A----------				
Dwelley	kabuli	68	7	8	25	108	--	3120	765	27.4	396	1304
Sierra	kabuli	67	6	6	25	140.3	--	3282	673	33.1	353	1329
Myles	desi	71	4	1	28	113.0	54.5	3546	808	949	879	1768
Amit	desi	71	5	1	30	179.5	57.2	--	595	1169	882	--
CDC Chico	desi	71	3	3	29	160.0	57.1	--	--	959	--	--
Dylan	kabuli	69	7	5	22	157.5	55.6	--	--	312	--	--
LSD 5%	--	1	1	1	5	32.9	0.9	392	192	595	--	--
C.V.%	--	0.7	16.0	14.4	11.4	8.3	0.9	8.0	16.4	69.5	--	--
Mean	--	69	5	4	27	143.0	56.1	3417	772	560	--	--

DAP=Days after planting

Table 71. Western Regional Chickpea Yield Trial, Williston Research Extension Center - 2005.
Data from Neil Riveland, North Dakota State University.

Cultivar	Days to Bloom	Canopy Height		Test Weight	1000 KWT	seed yield	seed yield
		cms	inches	lbs/b	gms	lbs/acre	bus/acre
Dwelley	57.8	36.8	14.5	60.5	506.8	1157	19.3
Sierra	55.5	36.3	14.3	59.2	521.6	1300	21.7
CA9783163C	57.3	36	14.2	57.8	525.6	1069	17.8
CA9990B1579C	52.8	33	13	58.8	518.4	1279	21.3
CA0090B347C	50.8	33.5	13.2	57	539.6	1145	19.1
CA99901604C	52.5	32.8	12.9	61.2	484.4	1614	26.9
CA0190B839C	54.5	35.5	14	59.8	529.6	1056	17.6
CA9890233W	57.5	31.3	12.3	59.1	530	982	16.4
CA00901875W	57.5	36	14.2	57.4	517.6	1059	17.6
CA0090B015W	57.3	42	16.5	58.9	488.4	1109	18.5
HIGH MEAN	57.8	42	16.5	61.2	539.6	1614	26.9
LOW MEAN	50.8	31.3	12.3	57	484.4	982	16.4
EXP MEAN	55.3	35.3	13.9	59	516	1177	19.6
C.V. %	1.5	17.5	17.5	1.1		15	15.3
LSD 5%	1.2	NS	NS	1.5		261	4.4
LSD 1%	1.6	NS	NS	2.2		353	5.9
# OF REPS	4	4	4	2	1	4	4
F-TRT	38.3	0.9	0.9	8	0	4	4.1

Location of the WREC: Latitude 48 8'; Longitude 103 44'W; Elevation 2105 ft.
Planted: May 16 on Fallow. Applied Fertilizer in lbs/a: 3N:16P2O5:0K:
Soil Test to two feet in lbs/a: 91N:19P:300K:106S 2.0 OM pH-6.5
Soil Type: Williams-Bowbells Loam
Harvested: August 29 Harvested Area: 60 ft2
Trifluralin at 1.0 lbs/a ai PPI in the fall of 2004 gave good weed control.

Table 72. Western Regional Chickpea Yield Trial, Milton Freewater, OR - 2005 (0599).
Data from USDA-ARS, Pullman, WA.

Cultivar	Origin	Leaf Type	Seed Type	Seed Yield	% Check
				..kg/ha..	
CA9990I604C	X94C080	C	W	836	148
CA0090B347C	X96C004	S	C	610	108
*SIERRA		S	C	564	100
CA9990B1579C	X92C016	S	C	514	91
CA0090B015W	X94C005	C	W	408	72
CA0190B839C	X96C031	S	C	401	71
CA9783163C	X92C017	C	C	374	66
CA9990I875W	X94C005	C	W	345	61
CA9890233W	X94C005	C	W	241	43
DWELLEY		S	C	211	37
Grand Mean				450	
C.V. (%)				23	
$LSD_{(\alpha=0.05)}$				149	

Planting date 4/15/2005. Harvest date 7/26/2005.
Yield data are means of three replications.
* Check variety.

Table 73. SDSU Chickpea Variety Trial – Hayes, SD - 2005.
Data from John Rickertsen, South Dakota State University.

Variety	Moisture	Test Wt	Yield	Yield	Seed Size
	%	Lb/Bu	Lb/A	Kg/Ha	seeds/oz
Dwelly	7.5	48.5	1150	1289	67.0
Sierra	7.3	45.3	1019	1142	69.0
CDC Frontier	8.4	49.6	1054	1182	75.0
CDC Yuma	9.0	50.1	1182	1325	65.0
CDC Xena	8.9	50.8	1212	1358	55.0
Amit (B-90)	8.5	50.3	1324	1484	100.0
CDC Anna	9.1	50.4	1133	1269	144.0
CDC Cabri	8.3	52.3	1098	1230	117.0
CDC Desiray	7.1	44.7	1202	1348	141.0
CA9783163C	6.4	44.5	1159	1299	53.0
CA9990B1579C	3.0	21.7	958	1074	55.0
CA9990I604C	6.2	42.3	1071	1200	56.0
CA0090B347C	8.4	53.6	1333	1494	83.0
CA0190B839C	7.5	49.7	1159	1299	54.0
CA9890233W	9.1	51.9	1054	1182	65.0
CA9990I875W	7.4	50.3	1054	1182	50.0
CA9990B015W	7.6	51.0	1141	1279	54.0
LSD (P=.05)	2.09	11.84	314.2	352.2	.
Standard Deviation	1.45	8.20	219.9	246.4	.
CV	19.01	17.28	19.36	19.36	.
Grand Mean	7.62	47.46	1135.46	1272.69	76.65
Bartlett's X2	17.689	40.401	18.124	18.124	.
P(Bartlett's X2)	0.342	0.001*	0.317	0.317	.
Replicate F	0.593	0.209	6.091	6.092	
Replicate Prob(F)	0.6239	0.8892	0.0015	0.0015	
Treatment F	4.248	3.190	0.821	0.821	
Treatment Prob(F)	0.0002	0.0025	0.6561	0.6560	

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Column 3: TY1 = 348.48*[C3]
Column 4: TY2 = 390.5967*[3]
Planted: April 28
Harvested: August 22
Herbicide: Spartan 75DF 4 oz/A

Table 74. Western Regional Chickpea Yield Trial-0599, Powell, WY - 2005.
Data from Abdel Mesbah, University of Wyoming.

Cultivar	Accession No.	Yield
		lbs/ac
Dwelley	CA188359	1427
Sierra	CA9783152C	1539
....	CA9783163C	1077
....	CA9990B1579C	2136
....	CA99901604C	1143
....	CA0090B347C	1347
....	CA0190B839C	895
....	CA9890233W	1010
....	CA00901875W	1296
....	CA0090B015W	1395
	Mean	1327
	C.V.%	33.7
	LSD (5%)	511

Planting date: June 4, 2005.
Harvest date: November 10, 2005.