



2005 North Dakota Alternative Crop Variety Performance

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This publication contains information on selected buckwheat, chickpea, field pea, lentil, mustard, safflower and triticale varieties that North Dakota State University tested in 2005. Additional alternative crop varieties may have been tested but are not listed. Although alternative crops may have been tested across the state, adaptation may be limited to specific regions.

Information contained in this publication is based on research coordinated by the following NDSU Research Extension Center and Main Station agronomists.

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Contact NDSU Research Extension Centers or Extension Service offices for more detailed and site-specific information on alternative crop variety performance and production recommendations.

Crop variety data in an electronic format are available at:

www.ag.ndsu.nodak.edu/aginfo/variety/

Weather data are available at

<http://ndawn.ndsu.nodak.edu/>

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Buckwheat variety trials, 2005

Variety	Yield (lb/acre)						2005	2 yr	3 yr
	Langdon	Carrington	Williston	Prosper	Minot	Hettinger	Avg	Avg	Avg
AC Manisoba	3307	1188	434	2333	2395	608	1711	1543	1268
AC Springfield	2771	1092	431	2396	2107	547	1557	1407	1222
Koto	2824	1273	544	1831	2058	464	1499	1470	1281
Mancan	2895	1446	439	2300	2012	776	1645	1457	1260
Manor	2873	1273	421	2280	1931	666	1574	1446	--
Trial Mean	2929	1277	499	2226	2320	587	--	--	--
LSD 5%	NS	206	71	296	605	NS	--	--	--

Variety	Test Weight (lb/bu)						
	Langdon	Carrington	Williston	Prosper	Minot	Hettinger	Avg
AC Manisoba	46.5	44.3	40.9	40.9	41.3	38.2	42.0
AC Springfield	44.9	41.9	41.2	39.4	41.7	37.2	41.1
Koto	49.6	46.5	43.6	42.0	42.0	40.9	44.1
Mancan	47.8	46.4	43.2	42.9	43.4	40.2	44.0
Manor	47.1	44.3	42.7	41.3	43.6	36.9	42.7
Trial Mean	48.1	45.7	43.0	42.3	43.1	38.0	--
LSD 5%	1.0	1.0	2.5	1.7	1.1	--	--

Variety	Days to Flower				Avg
	Carrington	Williston	Prosper	Hettinger	
AC Manisoba	33	36	28	40	34
AC Springfield	32	36	28	40	34
Koto	33	35	28	40	34
Mancan	30	34	28	39	33
Manor	31	35	28	40	34
Trial Mean	32	35	28	40	--
LSD 5%	1	1	NS	NS	--

Buckwheat variety trials, 2005

Variety	Plant Height (inches)					Avg
	Langdon	Carrington	Williston	Prosper	Minot	
AC Manisoba	44	52	27	60	34	43
AC Springfield	41	54	26	56	35	42
Koto	43	52	24	53	39	42
Mancan	40	52	28	55	32	41
Manor	40	49	27	54	35	41
Trial Mean	42	51	26	54	35	--
LSD 5%	NS	NS	4	5	NS	--

Variety	1000 KWT (g)					Lodging (0-9)		
	Hettinger	Prosper	Carrington	Minot	Avg	Langdon	Prosper	Avg
AC Manisoba	31.2	31.0	30.9	31.0	31.0	6.7	7.5	7.1
AC Springfield	30.9	34.5	31.1	31.0	31.9	3.3	7.5	5.4
Koto	33.3	34.0	31.7	31.0	32.5	2.7	5.5	4.1
Mancan	29.3	27.9	25.6	29.0	28.0	3.7	8.0	5.9
Manor	27.2	28.8	27.0	29.0	28.0	4.7	7.8	6.3
Trial Mean	30.5	31.9	29.7	30.1	--	4.3	7.4	--
LSD 5%	3.5	2.0	2.2	NS	--	NS	0.7	--

Location	Planting Date	Harvest Date
Langdon	May 31	September 20
Carrington	June 2	August 22
Williston	June 6	September 9
Prosper	May 31	September 12
Minot	June 6	September 21
Hettinger	May 16	September 20

Chickpea variety trials, 2005

Seed Yield (lb/acre)						
Variety	Carrington	Williston	Hettinger	Prosper	Average**	Average*
<i>Kabuli</i>						
CDC Frontier	3098	2314	--	--	2706	--
CDC Yuma	3187	1791	--	--	2489	--
Dwelly	2734	1139	2455	1421	1937	1937
Dylan	2265	1371	2492	1243	1818	1843
Sierra	2870	1144	2399	1964	2007	2094
<i>Small Kabuli</i>						
Amit	2726	1848	3342	1246	2287	2291
CDC Chico	2968	2027	3389	1849	2498	2558
<i>Desi</i>						
CDC Anna	2888	1888	--	--	2388	--
CDC Cabri	3093	1975	--	--	2534	--
CDC Desiray	2736	1817	--	--	2277	--
Myles	2434	1911	3108	1019	2173	2118
Mean	2818	1798	2864	1457	--	--
LSD 5%	398	304	311	483	--	--

*All sites.

**Carrington and Williston.

Days to First Flower						
Variety	Carrington	Williston	Hettinger	Prosper	Average**	Average*
<i>Kabuli</i>						
CDC Frontier	50	43	--	--	47	--
CDC Yuma	42	43	--	--	43	--
Dwelly	48	48	78	54	48	57
Dylan	40	39	75	39	40	48
Sierra	48	44	76	42	46	53
<i>Small Kabuli</i>						
Amit	53	43	77	54	48	57
CDC Chico	38	39	75	38	39	48
<i>Desi</i>						
CDC Anna	45	40	--	--	43	--
CDC Cabri	38	39	--	--	39	--
CDC Desiray	41	42	--	--	42	--
Myles	41	42	75	41	42	50
Mean	44	42	76	45	--	--
LSD 5%	2	1	1	1	--	--

*All sites.

**Carrington and Williston.

Chickpea variety trials, 2005

Plant Height (inches)						
Variety	Carrington	Williston	Hettinger	Prosper	Average**	Average*
<i>Kabuli</i>						
CDC Frontier	20	16	--	--	18	--
CDC Yuma	22	16	--	--	19	--
Dwelly	18	16	19	--	17	18
Dylan	18	14	14	--	16	15
Sierra	19	17	18	--	18	18
<i>Small Kabuli</i>						
Amit	20	16	18	--	18	18
CDC Chico	20	15	16	--	18	17
<i>Desi</i>						
CDC Anna	20	14	--	--	17	--
CDC Cabri	20	16	--	--	18	--
CDC Desiray	17	12	--	--	15	--
Myles	19	14	14	--	17	16
Mean	19	15	17	--	--	--
LSD 5%	2	2	2	--	--	--

*All sites.

**Carrington and Williston.

Test Weight (lb/bu)						
Variety	Carrington	Williston	Hettinger	Prosper	Average**	Average*
<i>Kabuli</i>						
CDC Frontier	64	63	--	--	64	--
CDC Yuma	63	66	--	--	65	--
Dwelly	63	61	60	58	62	61
Dylan	59	60	56	54	60	57
Sierra	62	60	60	56	61	60
<i>Small Kabuli</i>						
Amit	64	64	62	58	64	62
CDC Chico	65	63	62	56	64	62
<i>Desi</i>						
CDC Anna	64	65	--	--	65	--
CDC Cabri	63	62	--	--	63	--
CDC Desiray	63	63	--	--	63	--
Myles	63	61	57	50	62	58
Mean	63	63	59	55	--	--
LSD 5%	1	2	1	4	--	--

*All sites.

**Carrington and Williston.

Chickpea variety trials, 2005

Seeds/Pound						
Variety	Carrington	Williston	Hettinger	Prosper	Average**	Average*
<i>Kabuli</i>						
CDC Frontier	1081	1164	--	--	1123	--
CDC Yuma	970	1036	--	--	1003	--
Dwelly	825	936	987	1093	881	960
Dylan	720	843	1176	1070	782	952
Sierra	872	908	1041	1100	890	980
<i>Small Kabuli</i>						
Amit	1524	1640	1767	2023	1582	1739
CDC Chico	1836	1771	1983	2182	1804	1943
<i>Desi</i>						
CDC Anna	2225	2110	--	--	2168	--
CDC Cabri	1625	1331	--	--	1478	--
CDC Desiray	2285	2142	--	--	2214	--
Myles	2505	2256	2719	3259	2381	2685
Mean	1497	1334	1406	1788	--	--
LSD 5%	95	--	--	185	--	--

*All sites.

**Carrington and Williston.

Chickpea variety trials, 2005

Seed Size (%)					
Variety	Carrington			Hettinger	
	> 9mm	>8mm	>7mm	>9mm	>8mm
<i>Kabuli</i>					
CDC Frontier	62	33	4	--	--
CDC Yuma	77	18	4	--	--
Dwelly	90	8	1	58	31
Dylan	92	4	2	49	34
Sierra	90	7	2	49	35
<i>Small Kabuli</i>					
Amit	5	34	50	--	--
CDC Chico	1	13	61	--	--
<i>Desi</i>					
CDC Anna	1	8	36	--	--
CDC Cabri	17	43	28	--	--
CDC Desiray	0	1	28	--	--
Myles	0	1	43	--	--
Mean	24	15	40	52	32
LSD 5%	7	7	6	4	NS

Location	Plant date	Harv date
Carrington	May 6	Sept 15
Williston	April 26	Aug 22&29
Hettinger	April 6	Aug 31
Prosper	May 17	Sept 21

Single or multiple applications of foliar fungicides were applied to manage ascochyta blight.

Minot data not reported due to ascochyta blight.

Field Pea variety trials, 2005

Seed Yield (bushels/acre)													
Variety	Carrington	Prosper	Hettinger	Langdon	Wilton	Minot	Wells Co.	Benson Co.	Williston	Re-crop	Renville	Wishek	Average
Yellow													
CDC Mozart	68.3	44.7	72.3	55.9	44.5	55.4	50.4	49.0	44.1	29.7	64.7	36.6	51.3
DS Admiral	66.8	37.0	59.1	63.6	55.4	55.5	54.3	44.0	41.0	29.3	63.6	38.2	46.4
Eclipse	64.9	38.3	68.3	65.4	64.1	58.5	64.3	51.0	46.2	31.1	67.4	36.6	54.7
Green													
Cruiser	55.2	34.6	67.7	51.0	24.3	51.6	41.4	37.0	39.1	26.9	48.1	32.9	42.5
Majoret	66.6	34.7	66.4	66.4	48.5	58.4	48.2	44.0	44.5	27.4	53.2	41.8	50.0
Nitouche	56.4	35.0	66.4	60.3	41.1	55.3	45.2	39.0	39.7	25.8	54.6	32.0	45.9
Stirling	56.7	36.4	59.3	46.1	26.1	38.9	38.1	33.0	38.1	25.0	51.2	29.2	39.8
Trial Mean	60.9	37.3	59.6	61.1	47.5	53.4	48.5	43.0	41.2	28.4	55.1	35.3	--
LSD 5%	7.4	3.7	7.5	7.4	14.2	--	9.6	3.6	4.4	3.9	7.3	4.9	--

Seed Weight (grams/1000)													
Variety	Carrington	Prosper	Hettinger	Langdon	Wilton	Minot	Wells Co.	Benson Co.	Williston	Re-crop	Renville	Wishek	Average
Yellow													
CDC Mozart	216	231	209	220	224	238	199	104	250	201	177	207	206
DS Admiral	235	234	228	253	195	240	219	103	264	214	235	216	195
Eclipse	241	245.4	231	271	250	252	228	110	277	218	249	233	234
Green													
Cruiser	178	176	202	185	141	193	154	111	235	182	177	180	176
Majoret	228	220	234	250	188	233	204	119	279	224	206	214	217
Nitouche	245	234	243	254	152	247	208	118	301	247	230	248	227
Stirling	206	211	207	229	209	220	193	117	249	196	210	187	203
Trial Mean	226	222	217	237	197	232	207	--	263	211	217	212	--
LSD 5%	13	9	13	--	27	--	22	--	7	15	16	7	--

Field Pea variety trials, 2005

Test Weight (lb/bu)													
Variety	Carrington	Prosper	Hettinger	Langdon	Wilton	Minot	Wells Co.	Benson Co.	Williston	Re-crop	Renville	Wishek	Average
Yellow													
CDC Mozart	64.7	65.1	62.4	62.3	64.2	64.7	63.7	64.0	65.0	64.7	63.2	64.6	64.1
DS Admiral	65.4	65.5	61.6	62.6	64.7	64.5	63.3	63.7	65.4	64.2	63.6	64.1	64.1
Eclipse	65.5	66.2	62.4	62.2	64.3	65.1	64.0	64.6	65.6	64.9	64.1	64.6	64.5
Green													
Cruiser	65.1	64.6	61.9	62.1	63.4	63.6	61.9	63.4	64.2	62.9	61.9	63.5	63.2
Majoret	65.2	65.9	59.2	63.2	63.4	64.3	62.5	64.3	65.6	64.4	62.6	64.6	63.8
Nitouche	64.2	64.3	61.0	61.6	62.3	62.6	61.2	62.4	64.2	62.6	61.9	63.2	62.6
Stirling	64.9	64.6	62.0	62.4	62.9	64.4	62.9	63.6	65.3	64.2	63.2	63.8	63.7
Trial Mean	64.7	65.2	61.4	62.1	63.4	64.2	62.7	63.6	65.0	63.9	63.0	64.1	--
LSD 5%	0.7	0.6	NS	0.6	0.8	--	0.7	0.5	0.5	0.8	0.6	0.5	--

Seed Protein (%)													
Variety	Carrington	Prosper	Hettinger	Langdon	Wilton	Minot	Wells Co.	Benson Co.	Williston	Re-crop	Renville	Wishek	Average
Yellow													
CDC Mozart	21.8	--	--	22.9	--	--	--	22.1	21.7	23.0	20.5	22.9	22.1
DS Admiral	21.0	--	--	22.2	--	--	--	21.7	20.9	21.3	20.5	22.1	21.3
Eclipse	23.6	--	--	24.0	--	--	--	22.5	22.3	22.9	21.6	24.6	23.1
Green													
Cruiser	23.0	--	--	24.5	--	--	--	22.5	21.1	22.3	22.9	24.0	22.9
Majoret	22.9	--	--	23.2	--	--	--	23.7	22.3	23.6	23.3	24.1	23.3
Nitouche	22.0	--	--	24.4	--	--	--	23.5	21.4	21.9	22.3	23.4	22.7
Stirling	23.4	--	--	23.5	--	--	--	23.2	21.2	22.3	23.9	23.8	23.0
Trial Mean	22.3	--	--	22.8	--	--	--	22.8	21.3	22.2	22.5	23.5	--
LSD 5%	1.2	--	--	1.4	--	--	--	NS	NS	1.4	1.6	0.8	--

Field Pea variety trials, 2005

Days to First Flower													
Variety	Carrington	Prosper	Hettinger	Langdon	Wilton	Minot	Wells Co.	Benson Co.	Williston	Re-crop	Renville	Wishek	Average
Yellow													
CDC Mozart	60	41	73	52	--	51	--	--	60	60	21	--	52.3
DS Admiral	62	42	73	53	--	53	--	--	60	60	37	--	60.0
Eclipse	62	42	74	53	--	53	--	--	60	61	21	--	53.3
Green													
Cruiser	62	42	73	52	--	52	--	--	59	59	21	--	52.5
Majoret	62	42	74	53	--	52	--	--	60	60	19	--	52.7
Nitouche	63	42	74	52	--	53	--	--	60	60	21	--	53.1
Stirling	58	38	71	50	--	51	--	--	57	58	22	--	50.7
Trial Mean	61	41	75	53	--	52	--	--	59	60	23	--	--
LSD 5%	0.9	1	1	0.7	--	--	--	--	1.0	1.0	NS	--	--

Harvest Ease (0-9*)													
Variety	Carrington	Prosper	Hettinger	Langdon	Wilton	Minot	Wells Co.	Benson Co.	Williston	Re-crop	Renville	Wishek	Average
Yellow													
CDC Mozart	7.0	7.3	--	8.3	--	--	--	--	5.0	5.8	--	7.8	6.9
DS Admiral	2.3	1.5	--	7.3	--	--	--	--	1.7	2.5	--	3.5	4.5
Eclipse	3.5	2.0	--	8.0	--	--	--	--	1.7	3.0	--	5.0	3.8
Green													
Cruiser	4.3	5.0	--	7.3	--	--	--	--	3.3	4.3	--	3.8	5.0
Majoret	4.3	2.0	--	8	--	--	--	--	3.0	3.5	--	4.0	4.3
Nitouche	4.0	3.5	--	7.8	--	--	--	--	2.3	4.0	--	3.0	4.4
Stirling	8.0	7.8	--	8.5	--	--	--	--	7.3	6.5	--	8.0	7.9
Trial Mean	4.6	4.1	--	7.6	--	--	--	--	3.6	4.1	--	5	--
LSD 5%	1.2	1.2	--	NS	--	--	--	--	1.4	1.7	--	2.4	--

*0-9; 0=upright 9=flat

Location	Planting date	Harvest date
Carrington	April 22	August 1 (86%)
Prosper	May 17	August 12
Hettinger	April 4	July 29
Langdon	May 16	September 7
Wilton	April 29	August 15
Minot	May 5	August 16
Wells County	May 19	August 29
Benson County	May 20	August 30
Williston	April 23	July 28
Williston Re-Crop	April 25	August 8
Renville	May 17	August 17
Wishek	April 20	August 2

Lentil variety trials, 2005

Variety	Coat Color	Market Type	Seed Yield (lb/acre)									
			Carr	Hett	Minot	(Fallow) Williston	(Recrop) Williston	2005 Avg	2004 Avg	2003 Avg	3 yr Avg	2 yr Avg
CDC Blaze	Red	Small	1635	2370	2059	1449	1550	1813	1322	1116	1822	1567
CDC Glamis	Green	Large	1583	1745	2695	1713	1807	1909	1116	1116	1116	1116
CDC LeMay	Green	French	2327	2135	2484	1116	1672	2155	1116	1116	1116	1116
CDC Milestone	Green	Small	1605	2378	2327	1777	1771	1972	2378	1116	1822	2175
CDC Redberry	Red	Small	2078	2492	2451	1116	1608	2157	1116	1116	1116	1116
CDC Richlea	Green	Medium	1925	2143	3076	1784	1795	2145	2275	1436	1952	2210
CDC Robin	Red	Small	1924	1956	3173	1316	1525	1979	1745	1151	1625	1862
CDC Rouleau	Red	Small	1672	2508	2728	1116	1565	2118	1116	1116	1116	1116
CDC Sedley	Green	Large	1304	1883	1941	1766	1695	1718	2047	1116	1116	1882
CDC Sovereign	Green	Large	1616	1794	3054	1595	1679	1948	1116	1116	1116	1116
CDC Viceroy	Green	Small	2060	2386	3771	1116	1696	2478	1116	1116	1116	1116
Crimson	Red	Small	2465	1981	1301	1399	1826	1794	1402	1064	1420	1598
Laird	Green	Ext Lrg	749	1534	2832	1687	1730	1706	2040	1088	1611	1873
Merritt	Green	Medium	1257	1364	2151	1543	1707	1604	1949	1300	1618	1777
Pardina	Brown	Small	797	2378	1277	1414	1753	1524	1445	1148	1524	1524
Pennell	Green	Ext Lrg	1460	1908	2109	1614	1703	1759	2063	1119	1647	1911
LSD 5%	--	--	410	251	657	260	NS	--	--	--	--	--
C.V.%	--	--	17.2	8.5	18.7	11	10	--	--	--	--	--
Mean	--	--	1668	2060	2464	1588	1693	1945	1913	1182	1929	1986

DAP=Days after planting

Lentil variety trials, 2005

Variety	Days to Bloom					
	Carrington	Hettinger	Minot	(Fallow) Williston	(Recrop) Williston	Avg
CDC Blaze	41	74	52	58	59	57
CDC Glamis	43	74	53	61	63	59
CDC LeMay	45	74	53	--	61	58
CDC Milestone	41	74	52	58	59	57
CDC Redberry	40	73	53	--	61	57
CDC Richlea	43	74	53	61	60	58
CDC Robin	39	74	52	59	58	56
CDC Rouleau	41	74	53	--	60	57
CDC Sedley	40	74	53	58	62	57
CDC Sovereign	44	74	53	61	62	59
CDC Viceroy	42	74	53	--	60	57
Crimson	42	73	53	58	60	57
Laird	47	74	54	63	63	60
Merritt	37	71	51	57	57	55
Pardina	38	71	52	58	58	55
Pennell	42	75	53	62	63	59
LSD 5%	1.1	1	1	2	1	--
C.V.%	1.9	0.6	1.1	3	1	--
Mean	41.4	73	53	59	60	--

Variety	Plant Height (inches)					
	Carrington	Hettinger	Minot	(Fallow) Williston	(Recrop) Williston	Avg
CDC Blaze	--	6	9	9	9	8
CDC Glamis	--	6	10	14	12	11
CDC LeMay	--	5	8	--	11	8
CDC Milestone	--	7	10	10	11	10
CDC Redberry	--	12	12	--	11	12
CDC Richlea	--	7	10	11	12	10
CDC Robin	--	9	11	10	10	10
CDC Rouleau	--	8	10	--	12	10
CDC Sedley	--	7	11	13	13	11
CDC Sovereign	--	9	10	14	14	12
CDC Viceroy	--	8	11	--	11	10
Crimson	--	6	8	9	10	8
Laird	--	7	10	14	14	11
Merritt	--	10	10	12	12	11
Pardina	--	5	4	9	9	7
Pennell	--	7	9	11	11	9
LSD 5%	--	3	2	1	2	2
C.V.%	--	25.8	12.9	8	11	14
Mean	--	7	10	11	11	10

Lentil variety trials, 2005

Variety	Seed Weight (g/1000 seeds)					
	Carrington	Hettinger	Minot	(Fallow) Williston	(Recrop) Williston	Avg
CDC Blaze	30.6	29.0	35.8	32.9	33.3	32.3
CDC Glamis	55.7	45.4	63.5	63.7	62.9	58.2
CDC LeMay	30.7	28.6	35.8	--	31.5	31.7
CDC Milestone	31.6	29.8	38.8	36.0	36.2	34.5
CDC Redberry	38.5	35.4	42.5	--	44.3	40.2
CDC Richlea	48.9	40.4	52.8	51.8	53.1	49.4
CDC Robin	25.2	22.4	29.3	26.6	27.4	26.2
CDC Rouleau	33.6	31.4	36.0	--	37.9	34.7
CDC Sedley	63.3	57.8	73.8	74.2	74.4	68.7
CDC Sovereign	60.9	46.8	67.0	66.7	67.0	61.7
CDC Viceroy	30.1	27.2	36.0	--	31.5	31.2
Crimson	35.6	31.4	39.3	33.6	35.1	35.0
Laird	56.0	51.2	72.8	73.0	71.8	65.0
Merritt	57.4	44.4	68.0	61.8	65.2	59.4
Pardina	28.6	34.2	36.0	41.2	41.9	36.4
Pennell	64.0	51.2	72.8	70.0	68.8	65.4
LSD 5%	3.3	3.3	3.7	--	--	--
C.V.%	5.3	6.0	3.5	--	--	--
Mean	43.0	37.9	50.0	52.6	48.9	--

Variety	Test Weight (lb/bu.)					
	Carrington	Hettinger	Minot	(Fallow) Williston	(Recrop) Williston	Avg
CDC Blaze	62.8	61.2	63.3	64.0	63.9	63.0
CDC Glamis	60.1	55.7	60.6	60.6	60.7	59.5
CDC LeMay	62.6	60.9	63.5	""	63.3	62.6
CDC Milestone	61.5	60.0	61.9	63.3	63.2	62.0
CDC Redberry	61.5	60.3	62.8	--	62.8	--
CDC Richlea	60.6	56.6	60.7	61.4	61.1	60.1
CDC Robin	63.5	60.2	63.8	63.2	63.9	62.9
CDC Rouleau	60.9	60.0	62.1	--	62.5	61.4
CDC Sedley	59.5	57.0	60.3	61.4	61	59.8
CDC Sovereign	60.7	56.2	60.9	61.4	61.6	60.2
CDC Viceroy	62.6	61.0	63.3	--	63.3	--
Crimson	62.4	60.9	63.0	63.2	63	62.5
Laird	59.4	55.4	59.8	60.7	60.3	59.1
Merritt	58.7	53.8	59.6	59.4	59.7	58.2
Pardina	61.0	61.1	63.4	64.2	64.4	62.8
Pennell	58.7	55.5	59.2	59.3	59.2	58.4
LSD 5%	0.7	1.1	0.5	0.4	0.5	--
C.V.%	0.8	1.3	0.6	0.3	0.4	--
Mean	61	58.5	61.8	61.9	62.1	--

Lentil variety trials, 2005

Variety	Seeds per Pound					
	Carrington	Hettinger	Minot	(Fallow) Williston	(Recrop) Williston	Avg
CDC Blaze	14831	15655	12682	13799	13605	14114
CDC Glamis	8171	10000	7150	7127	7206	8112
CDC LeMay	14802	15874	12682	""	14418	14453
CDC Milestone	14357	15235	11701	12611	12516	13476
CDC Redberry	11786	12825	10682	""	10248	11764
CDC Richlea	9286	11238	8598	8764	8535	9472
CDC Robin	18023	20268	15495	17068	16578	17713
CDC Rouleau	13534	14459	12611	""	11962	13535
CDC Sedley	7208	7855	6152	6119	6096	6833
CDC Sovereign	7460	9701	6776	6807	6774	7686
CDC Viceroy	15103	16691	12611	""	14409	14802
Crimson	12766	14459	11552	13512	12937	13072
Laird	8123	8867	6236	6219	6319	7361
Merritt	7942	10225	6676	7346	6952	8047
Pardina	15954	13275	12611	11019	10825	13215
Pennell	7113	8867	6236	6486	6594	7176
LSD 5%	781	--	--	--	--	--
C.V.%	4.7	--	--	--	--	--
Mean	11654	12843	11436	--	10373	--

Variety	Lodging 0-9* Hettinger
CDC Blaze	4.2
CDC Glamis	7.0
CDC LeMay	6.0
CDC Milestone	6.5
CDC Redberry	2.2
CDC Richlea	5.8
CDC Robin	4.8
CDC Rouleau	4.8
CDC Sedley	4.8
CDC Sovereign	5.8
CDC Viceroy	5.2
Crimson	7.8
Laird	5.2
Merritt	5.2
Pardina	7.5
Pennell	6.0
LSD 5%	1.3
C.V.%	16.3
Mean	5.5

Location	Plant date	Harv date
Carrington	May 16	Aug 22
Hettinger	April 7	Aug 5
Minot	May 3	Sept 12
Williston (Fallow)	April 23	Aug 6
Williston (Recrop)	April 25	Aug 6

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

Mustard variety trials, 2005

		Seed Yield (lb/acre)						
						2005	2 yr	3 yr
Variety	Type	Langdon	Carrington	Williston	Prosper	Avg	Avg	Avg
AC Pennant	Yellow	1574	935	1202	971	1171	1415	1406
Ace	Yellow	1416	1016	1201	1062	1174	1478	1477
Andante	Yellow	1689	952	1218	1051	1228	1513	1345
Tilney	Yellow	1074	916	1208	930	1032	1387	1416
Forage	Oriental	2803	898	1057	1437	1549	--	--
Common	Brown	--	696	1221	710	--	--	--
Trial Mean		1711	902	1184	1027	--	--	--
LSD 5%		300	NS	NS	217	--	--	--

		Days to Flower				
		Langdon	Carrington	Williston	Prosper	Avg
Variety	Type					
AC Pennant	Yellow	23	34	51	33	35
Ace	Yellow	24	33	51	34	36
Andante	Yellow	23	34	50	33	35
Tilney	Yellow	23	34	51	34	36
Forge	Oriental	23	38	54	35	38
Common	Brown	--	39	55	37	--
Trial Mean		24	35	52	34	--
LSD 5%		0.7	0.8	0.7	1.0	--

		Plant Height (inches)				
		Langdon	Carrington	Williston	Prosper	Avg
Variety	Type					
AC Pennant	Yellow	43	31	32	34	35
Ace	Yellow	44	37	36	38	39
Andante	Yellow	44	33	33	39	37
Tilney	Yellow	44	32	33	39	37
Forge	Oriental	52	40	41	41	44
Common	Brown	--	36	35	39	--
Trial Mean		45	35	35	38	--
LSD 5%		2.2	3.4	4.5	NS	--

Mustard variety trials, 2005

Variety	Type	Days to End Flower			Days to Mature			Oil %
		Langdon	Prosper	Avg	Langdon	Carrington	Avg	Carr
AC Pennant	Yellow	65	65	65	85	77	81	26.5
Ace	Yellow	67	66	67	86	78	82	26.2
Andante	Yellow	66	65	66	86	77	82	25.2
Tilney	Yellow	68	66	67	86	77	82	26.2
Forge	Oriental	71	65	68	89	76	83	37.8
Common	Brown	--	66	--	--	76	--	36.1
Trial Mean		67	65	--	86	76	--	29.7
LSD 5%		1.4	NS	--	1.4	NS	--	1.8

Variety	Type	Bloom Duration (Days)			Lodging (0-9)			1000 KWT (g)
		Langdon	Prosper	Avg	Carrington	Prosper	Avg	Carr
AC Pennant	Yellow	20	32	26	0.8	1.5	1.2	4.35
Ace	Yellow	19	32	26	0	1.0	0.5	3.91
Andante	Yellow	20	31	26	0.5	1.5	1.0	4.26
Tilney	Yellow	18	32	25	0.3	1.5	0.9	4.13
Forge	Oriental	18	30	24	0.8	2.3	1.6	2.24
Common	Brown		30		1.3	6.0	3.7	2.16
Trial Mean		19	31	--	0.6	2.4	--	3.5
LSD 5%		--	2	--	NS	1.2	--	0.24

Variety	Type	Test Weight (lbs/bu)			
		Carrington	Williston	Prosper	Avg
AC Pennant	Yellow	56.3	57.3	54.0	55.9
Ace	Yellow	55.9	57.5	54.1	55.8
Andante	Yellow	56.1	57.3	53.4	55.6
Tilney	Yellow	55.9	56.9	53.5	55.4
Forge	Oriental	54.3	53.8	52.4	53.5
Common	Brown	53.5	53.4	48.2	51.7
Trial Mean		55.3	56.0	52.6	--
LSD 5%		0.5	2.4	1.6	--

Location	Planting Date	Harvest Date
Langdon	May 17	August 30
Carrington	May 16	August 12
Williston	April 26	August 6
Prosper	May 10	September 14
Minot	Trial data too unreliable to present.	
Hettinger	Trial froze	

Safflower variety trials, 2005

Variety	Seed Yield (lb/acre)							7 location average
	Minot Fallow	Hettinger No-till	--- Williston --- Recrop	--- Williston --- Fallow	---- Sidney, MT ---- Fallow	---- Sidney, MT ---- Irrigated	---- Sidney, MT ---- Recrop	
<i>Oleic</i>								
Montola 2003	2932	1753	1096	1422	1706	2585	1150	1806
Montola 2000	2660	1367	968	1209	1538	1468	921	1447
95B7446	2532	1780	1039	1605	1680	2323	1161	1731
Montola 2004	2378	1753	1185	1408	1737	1817	1302	1654
<i>Linoleic</i>								
Finch	2885	1627	1215	1385	1325	1920	1029	1627
Nutrasaff	1757	1680	821	1384	1623	1799	1093	1451
95B3538	2371	1493	1268	1797	1955	1898	1063	1692
S-541	2677	1567	1252	1525	1653	1509	1013	1600
Mean	2610	1736	1066	1429	1663	1985	999	--
LSD 5%	NS	221	181	138	380	534	258	--

Safflower variety trials - 3 year averages

Variety	Seed Yield (lb/acre)					Seed Oil (%)				
	Minot Fallow	Hettinger No-till	--- Williston --- Fallow	--- Williston --- Recrop	Sidney Fallow	Minot Fallow	Hettinger No-till	--- Williston --- Fallow	--- Williston --- Recrop	Sidney Fallow
<i>Oleic</i>										
Montola 2003	2924	1551	1550	1414	1683	33.5	33.8	33.7	33.1	36.1
Montola 2000	2157	1411	1368	1161	1604	33.2	35.5	33.7	34.1	37.2
95B7446	2669	1798	1650	1273	1819	31.7	33.3	32.3	31.9	35.0
<i>Linoleic</i>										
Finch	2465	1636	1480	1400	1586	33.5	33.7	33.3	33.4	35.2
S-541	2697	1720	1488	--	1795	38.1	38.1	37.1	--	40.2

Safflower variety trials, 2005

Variety	Test Weight (lb/bu)							7 location average
	Minot Fallow	Hettinger No-till	--- Williston --- Recrop	--- Williston --- Fallow	----- Sidney, MT ----- Fallow	----- Sidney, MT ----- Irrigated	----- Sidney, MT ----- Recrop	
<i>Oleic</i>								
Montola 2003	35.8	41.0	41.9	41.2	43.0	40.8	41.2	40.7
Montola 2000	33.8	39.0	40.8	40.0	42.5	36.2	40.5	39.0
95B7446	34.4	41.8	42.7	41.8	44.0	39.3	42.3	40.9
Montola 2004	34.0	40.1	41.3	40.9	42.2	36.8	41.0	39.5
<i>Linoleic</i>								
Finch	38.4	43.8	44.9	44.9	46.2	42.0	44.8	43.6
Nutrasaff	32.4	37.8	37.9	37.3	38.5	39.2	37.8	37.3
95B3538	34.8	41.2	43.5	42.4	44.2	40.3	42.2	41.2
S-541	33.2	41.0	41.6	40.7	42.8	37.8	41.2	39.8
Mean	34.5	41.0	42.0	41.2	42.9	39.5	41.1	--
LSD 5%	NS	1.0	0.6	0.8	0.7	2.0	0.8	--

Location	Plant Date	Harvest Date
Hettinger	April 6	September 20
Minot	May 16	September 26
Williston Fallow	May 2	September 2
Williston Recrop	May 2	September 8
Sidney Fallow	April 26	September 12
Sidney Recrop	May 2	September 7
Sidney Irrigated	May 5	September 12

Triticale variety trials, 2005

Seed Yield (bu/acre)								
Variety	Carrington	Hettinger	Minot	Williston	2005	2004	2003	3 year
Companion	64.1	39.3	93.3	63.2	65.0	69.5	60.0	64.8
Laser	56.4	30.3	101.4	59.5	61.9	69.6	60.8	64.1
Marvel	45.4	30.0	99.5	49.4	56.1	58.9	47.4	54.1
RSI 310	59.0	45.0	104.2	63.1	67.8	70.6	66.5	68.3
Trical 2700	54.2	28.8	108.8	56.8	62.2	71.7	58.0	64.0
Wapiti	67.6	41.0	102.5	59.7	67.7	73.9	42.6	61.4
Mean	57.8	35.7	101.6	58.6	63.4	69.0	55.9	62.8
LSD 5%	5.4	4.7	NS	5.8	5.3	5.1	4.3	4.9

Days to Heading					
Variety	Carrington	Hettinger	Minot	Williston	2005
Companion	50.0	78.0	60	58	61.5
Laser	48.0	79.0	59	58	61.0
Marvel	51.5	79.0	61	61	63.1
RSI 310	51.3	78.0	60	60	62.3
Trical 2700	53.8	84.0	67	63	67.0
Wapiti	49.3	78.0	60	58	61.3
Mean	50.6	79.0	61	60	62.7
LSD 5%	0.6	0.1	1	1	0.7

Plant Height (inches)					
Variety	Carrington	Hettinger	Minot	Williston	2005
Companion	50.0	43.0	""	43	45.3
Laser	47.4	41.0	""	41	43.1
Marvel	40.4	44.0	""	39	41.1
RSI 310	38.4	35.0	""	36	36.5
Trical 2700	45.5	42.0	""	40	42.5
Wapiti	49.2	42.0	""	43	44.7
Mean	45.1	41.0	""	40	42.0
LSD 5%	2.4	3.0	""	3	2.8

Test Weight (lb/bu)					
Variety	Carrington	Hettinger	Minot	Williston	2005
Companion	53.4	49.6	53.0	54.6	52.7
Laser	51.5	49.8	53.4	54.7	52.4
Marvel	43.8	42.8	45.8	43.5	44.0
RSI 310	50.7	50.6	53.4	53.9	52.2
Trical 2700	48.0	45.8	47.3	49.5	47.7
Wapiti	53.5	50.2	53.6	54.2	52.9
Mean	50.2	48.1	51.1	51.7	50.3
LSD 5%	0.8	1.4	1.8	1.8	1.5

Location	Planting Date	Harvest Date
Carrington	19-May	30-Sep
Hettinger	4-Apr	2-Aug
Minot	3-May	24-Aug
Williston	29-Apr	11-Aug

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