

North Dakota Dry Bean Variety Trial Results for 2013 and Selection Guide

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List of Tables

- Table 1. North Dakota Dry Edible Bean Planted Acreage, 2003 to 2013.
- Table 2. North Dakota Dry Edible Bean Production by Commercial Class, 2003 to 2012.
- Table 3. April-September 2013 Average Temperature and Precipitation Rankings for Selected North Dakota Locations.
- Table 4. 2013 Pinto Bean Variety Trial - Prosper and Hatton, N.D. (NDSU).
- Table 5. 2013 Pinto Bean Variety Trial - Forest River, N.D. (NDSU).
- Table 6. 2013 Navy Bean Variety Trial - Prosper, N.D. (NDSU).
- Table 7. 2013 Navy Bean Variety Trial - Hatton and Forest River, N.D. (NDSU).
- Table 8. 2013 Kidney Bean Variety Trial - Park Rapids, Minn. (NDSU).
- Table 9. 2013 Kidney Bean Variety Trial - Perham, Minn. (NDSU).
- Table 10. 2013 Black Bean Variety Trial - Prosper, Hatton and Forest River N.D. (NDSU).
- Table 11. 2013 Dry Bean Variety Trial - Prosper, Hatton and Forest River, N.D. (NDSU).
- Table 12. 2013 Dry Bean Variety Trial - Park Rapids and Perham, Minn. (NDSU).
- Table 13. 2013 Dry Bean Variety Trial - Dryland - Carrington.
- Table 14. 2013 Dry Bean Variety Trial - Irrigated - Carrington.
- Table 15. 2013 Dry Bean Variety Trial - Irrigated - Oakes (Carrington REC).
- Table 16. 2013 Dry Bean Variety Trial - Langdon.
- Table 17. 2013 Dry Bean Variety Trial - Cavalier - (Langdon REC).
- Table 18. 2013 Dry Bean Variety Trial - Hettinger.
- Table 19. Pinto Bean Variety Descriptions.
- Table 20. Navy Bean Variety Descriptions.
- Table 21. Small Red, Black, Pink and Yellow Bean Variety Descriptions.
- Table 22. Light Red, Dark Red and White Kidney, Great Northern, Cranberry and Otebo Bean Variety Descriptions.

North Dakota Bean Production

Dry edible beans have been a significant crop in eastern and east-central North Dakota during the past decade. Acreage for the past 11 years is shown in Table 1, with production by classes in Table 2.

Table 1. North Dakota Dry Edible Bean¹ Planted Acreage, 2003 to 2013.

Year	Acreage
2003	540,000
2004	560,000
2005	620,000
2006	670,000
2007	690,000
2008	660,000
2009	610,000
2010	800,000
2011	410,000
2012	700,000
2013	510,000

Source: North Dakota Agricultural Statistics Service – USDA.

Table 2. North Dakota Dry Edible Bean Production by Commercial Class, 2003 to 2012.

Year	Pinto (Cwt)	Navy (Cwt)
2003	5,864,000	1,164,000
2004	3,573,000	650,000
2005	6,584,000	1,343,000
2006	4,988,000	1,585,000
2007	7,606,000	1,611,000
2008	6,660,000	2,087,000
2009	5,950,000	1,255,000
2010	7,543,000	1,958,000
2011	2,709,000	1,125,000
2012	7,610,000	2,215,000

Source: North Dakota Agricultural Statistics Service – USDA.

2013 Growing Season Weather Summary for North Dakota

Table 3. April-September 2013 Average Temperature and Precipitation Rankings for Selected North Dakota Locations.

Bowman	49th Warmest	The Wettest
Bismarck	67th Coolest	8th Wettest
Cavalier	21st Warmest	38th Wettest
Fargo	37th Warmest	4th Wettest
Minot Exp. Station	23rd Warmest	The Wettest
Williston Exp. Station	37th Coolest	3rd Wettest
North Dakota Average	45th Coolest (119 years)	8th Wettest (119 years)

Source: Adnan Akyüz, NDSU, North Dakota state climatologist.

2013 Dry Bean Performance Trials

Information about dry bean variety performance can be accessed on the Web at www.ag.ndsu.edu/varietytrials/, the site with all variety trial data from all NDSU Research Extension Centers for all crops. The agronomic data presented in this publication are from replicated research plots using experimental designs that enable the use of statistical analysis. The LSD (least significant difference) numbers beneath the columns in tables are derived from the statistical analyses and only apply to the numbers in the column in which they appear. If the difference between two varieties exceeds the LSD value, it means that with 90 (0.10 level) percent probability, the higher-yielding variety has a significant yield advantage. If the difference between two varieties is less than the LSD value, then the variety yields are considered similar. The abbreviation NS is used to indicate no significant difference for that trait among any of the varieties. The CV is a measure of variability in the trial. The CV stands for coefficient of variation and is expressed as a percentage. Large CVs mean a large amount of variation that could not be attributed to differences in the varieties.

In the tables, the “mean” indicates the average of the observations in the column. Only compare values within the table and look for trends for the desired trait among different experimental sites and years. In the tables, the dry bean varieties are arranged in alphabetical order within market class. Footnotes provide more detailed information about data in the table under which they appear. Characteristics to evaluate for selecting a dry bean variety include marketing class, yield potential in your area, test weight, reaction to problematic diseases and maturity date.

When selecting a high-yielding and good-quality variety, use data that summarize several years and locations. Choose a high-quality variety that, on average, performs the best at multiple locations near your farm during several years.

Information contained in this publication is based on research conducted by North Dakota Agricultural Experiment Station scientists. We want to express our thanks to dry bean growers who assisted with the on-farm variety testing.

Cooperators

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Mark Dombeck	Perham, Minn.

Presentation of data for the varieties tested does not imply approval or endorsement by the authors or agencies conducting the tests. NDSU approves the reproduction of any table in this publication only if no portion is deleted, appropriate footnotes are given, the order of the data is not rearranged and NDSU is credited for the data.

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Table 4. 2013 Pinto Bean Variety Trial - Prosper and Hatton, N.D. (NDSU) - Authors, J. Osorno, J. VanderWal and M. Kloberdanz.

Variety	Days to Flowering	Plant Height	Days to Maturity	100 Seed Weight	Seed Yield
Prosper (Cass County)	(DAP) ¹	(inch)	(DAP) ¹	(gram)	(lb/a)
Buster	53	21	105	41.4	2,030
GTS-904	55	19	106	38.1	2,390
GTS-907	52	21	102	40.4	2,440
La Paz	55	19	106	36.2	2,360
Lariat	57	19	110	35.2	2,220
Mariah	55	22	107	38.3	2,300
Maverick	54	19	107	39.2	2,440
Medicine Hat	53	18	106	38.6	2,000
Monterrey	56	21	102	33.2	2,230
ND-307	55	21	107	40.6	2,790
Santa Cruz	56	22	106	35.8	3,000
Sinaloa	56	19	104	34.2	2,320
Sonora	56	21	103	29.1	2,070
Stampede	55	24	103	38.7	2,820
Windbreaker	53	21	105	39.7	2,220
Mean	55	20	105	37.2	2,375
CV %	--	14.0	2.0	7.2	24.2
LSD 0.10	--	NS	2.0	2.9	NS
Hatton (Traill County)					
Buster	42	22	92	34.7	3,520
Croissant	45	22	95	35.7	3,130
GTS-904	44	23	92	36.8	3,360
GTS-907	43	24	92	36.2	3,540
La Paz	45	25	92	32.7	3,710
Lariat	43	22	94	33.3	3,090
Mariah	43	23	90	31.9	3,090
Maverick	43	21	91	35.4	3,260
Medicine Hat	42	23	91	35.9	3,520
Monterrey	44	26	91	31.4	3,440
ND-307	41	23	93	36.2	3,420
Othello	39	16	90	33.6	2,650
PIN 1012	43	22	91	30.5	3,390
PIN 1314	42	22	91	35.6	3,410
Santa Cruz	44	26	92	30.9	3,420
Sinaloa	43	24	91	35.2	3,430
Sonora	42	24	92	30.0	3,440
Stampede	43	22	91	33.5	3,040
Windbreaker	42	21	92	35.7	3,560
Mean	43	23	92	34.0	3,338
CV %	3.0	8.0	2.0	7.0	10.8
LSD 0.10	2.0	2.4	2.0	2.7	370

Prosper - Planted: May 24. Harvested: Sept. 11. Previous crop: small grain.

Hatton - Planted: June 12. Harvested: Sept. 24. Previous crop: sugarbeet.

¹Days after planting.

Table 5. 2013 Pinto Bean Variety Trial - Forest River, N.D. (NDSU) - Authors, J. Osorno, J. VanderWal and M. Kloberdanz.

Variety	Plant Height	Days to Maturity	100 Seed Weight	Seed Yield
Forest River (Walsh County)	(inch)	(DAP) ¹	(gram)	(lb/a)
Buster	17	103	36.0	2,730
GTS-904	21	107	35.9	2,970
GTS-907	19	105	33.9	1,650
La Paz	23	105	31.2	3,050
Larian	17	108	34.1	1,780
Mariah	20	100	31.6	3,010
Maverick	17	106	33.1	1,740
Medicine Hat	19	99	38.4	2,020
Monterrey	21	106	33.1	2,460
ND-307	22	106	36.4	2,540
PIN 1012	18	98	32.7	2,760
PIN 1314	21	99	36.8	2,360
Santa Cruz	22	106	33.7	2,770
Sinaloa	22	104	32.5	2,470
Sonora	20	102	29.0	2,490
Stampede	20	104	33.6	2,380
Windbreaker	18	109	38.9	2,710
Mean	20	104	34.2	2,464
CV %	14.0	4.0	5.5	24.2
LSD 0.10	8.0	5.0	2.0	590

Planted: May 28. Harvested: Sept. 19. Previous crop: sugarbeet.

¹Days after planting.

Table 6. 2013 Navy Bean Variety Trial - Prosper, N.D. (NDSU) - Authors, J. Osorno, J. VanderWal and M. Kloberdanz.

Variety	Days to Flowering	Plant Height	Days to Maturity	100 Seed Weight	Seed Yield
Prosper (Cass County)	(DAP) ¹	(inch)	(DAP) ¹	(gram)	(lb/a)
Avalanche	55	21	107	19.0	1,550
Ensign	56	18	107	20.5	1,560
Medalist	56	19	104	17.2	2,100
Merlin	55	22	104	18.4	1,590
Norstar	55	18	103	18.3	1,430
OB-1723-06	54	22	106	16.5	2,600
T9905	56	16	112	20.5	2,160
Vigilant	54	23	105	19.4	1,980
Vista	57	20	113	17.7	1,960
Mean	55	20	107	18.6	1,881
CV %	--	20.0	--	5.2	32.3
LSD 0.10	--	NS	--	1.4	NS

Planted: May 24. Harvested: Sept. 26. Previous crop: small grain.

¹Days after planting.

Table 7. 2013 Navy Bean Variety Trial - Hatton and Forest River, N.D. (NDSU) - Authors, J. Osorno, J. VanderWal and M. Kloberdanz.

Variety	Days to Flowering (DAP) ¹	Plant Height (inch)	Days to Maturity (DAP) ¹	100 Seed Weight (gram)	Seed Yield (lb/a)
Hatton (Traill County)					
Avalanche	43	24	91	16.8	2,270
Ensign	43	22	91	16.5	2,080
Medalist	43	24	92	16.0	2,050
Merlin	42	24	94	17.6	2,560
NAV 1200	42	22	96	18.5	2,680
NAV 1246	43	24	93	16.5	2,340
Norstar	42	24	91	15.8	1,910
OB-1723-06	44	22	93	14.4	2,530
Portage	38	22	91	17.9	2,060
Rexeter	40	23	95	18.1	2,610
T9905	42	22	92	19.3	2,500
Vigilant	42	24	92	17.0	2,490
Vista	43	23	94	16.3	2,550
Mean	42	23	93	17.0	2,356
CV %	3.0	7.0	2.0	5.9	19.4
LSD 0.10	2.0	2.0	3.0	1.4	630
Forest River (Walsh County)					
Avalanche		20	109	17.9	1,240
Ensign		19	106	18.6	1,330
Indi		22	109	17.5	1,220
Medalist		21	110	16.9	1,420
Merlin		21	108	16.7	1,370
NAV 1200		22	108	18.5	1,950
NAV 1246		22	106	18.1	2,130
Norstar		19	109	17.9	810
OB-1723-06		20	111	16.4	1,640
Portage		20	103	18.3	1,360
T9905		22	105	18.6	1,550
Vigilant		20	108	17.7	1,390
Vista		19	113	17.0	1,290
Mean		21	108	17.7	1,438
CV %		13.0	4.0	6.5	6.5
LSD 0.10		NS	5.0	1.2	NS

Hatton - Planted: June 12. Harvested: Sept. 24. Previous crop: sugarbeet.

Forest River - Planted: May 25. Harvested: Sept. 19. Previous crop: sugarbeet.

¹Days after planting.

Table 8. 2013 Kidney Bean Variety Trial - Park Rapids, Minn. (NDSU) - Authors, J. Osorno, J. VanderWal and M. Kloberdanz.

Variety	Plant Height	Days to Maturity	100 Seed Weight	Seed Yield
Park Rapids (Hubbard County)	(inch)	(DAP) ¹	(gram)	(lb/a)
Cabernet	18	106	60.2	2,250
CELRK	17	100	59.0	1,740
Clouseau	19	110	75.8	2,700
Dynasty	21	111	67.0	2,480
Foxfire	18	106	58.6	1,840
GTS-104	17	109	60.5	2,360
Inferno	20	114	63.7	2,700
KDD 1013	20	109	64.1	3,070
KDD 1030	22	101	51.4	1,880
Majesty	17	109	75.4	2,110
Montcalm	18	113	67.3	2,550
Pink Panther	17	107	70.3	2,310
Red Rover	20	104	55.6	1,730
Redhawk	18	108	59.5	2,030
Mean	19	108	63.5	2,268
CV %	12.0	2.0	7.1	16.5
LSD 0.10	3.1	3.0	6.2	410

Planted: May 26. Harvested: Sept. 23. Previous crop: corn.

¹Days after planting.

Table 9. 2013 Kidney Bean Variety Trial - Perham, Minn. (NDSU) - Authors, J. Osorno, J. VanderWal and M. Kloberdanz.

Variety	Plant Height	Days to Maturity	100 Seed Weight	Seed Yield
Perham	(inch)	(DAP) ¹	(gram)	(lb/a)
Cabernet	22	103	59.4	2,420
CELRK	22	92	64.6	2,040
Clouseau	21	100	70.7	2,380
Dynasty	18	110	63.7	2,210
Foxfire	21	99	54.8	1,980
GTS-104	24	106	52.1	1,980
Inferno	23	112	60.1	2,610
KDD 1013	24	99	58.3	2,650
KDD 1030	23	99	58.5	1,980
Majesty	21	103	67.3	2,020
Montcalm	22	105	61.7	2,090
Pink Panther	20	99	65.2	3,080
Red Rover	22	98	65.1	2,050
Redhawk	20	99	57.0	2,340
Mean	22	102	61.3	2,274
CV %	14.0	3.0	7.5	18.0
LSD 0.10	NS	4.0	6.5	580

Planted: June 3. Harvested: Sept. 22. Previous crop: potato.

¹Days after planting.

Table 10. 2013 Black Bean Variety Trial - Prosper, Hatton and Forest River, N.D. (NDSU) - Authors, J. Osorno, J. VanderWal and M. Kloberdanz.

Variety	Days to Flowering	Plant Height	Days to Maturity	100 Seed Weight	Seed Yield
Prosper (Cass County)	(DAP) ¹	(inch)	(DAP) ¹	(gram)	(lb/a)
Eclipse	56	19	106	20.4	2,170
GTS-1103	57	20	115	19.8	2,050
Loreto	57	22	107	18.3	2,130
T-39	58	22	105	19.1	2,110
Zorro	56	20	109	20.6	2,430
Mean	57	21	108	19.6	2,178
CV %	--	18.0	4.0	5.9	25.8
LSD 0.10	--	NS	NS	1.6	NS
Hatton (Traill County)					
BKB 1312	42	24	92	18.6	3,230
BKB 1313	43	21	92	16.7	2,870
Carman Black	41	23	94	19.4	2,980
Eclipse	43	25	91	16.9	2,700
GTS-1103	46	21	97	18.9	2,550
Loreto	43	23	98	17.9	2,580
Super Jet	43	23	95	18.4	2,770
T-39	44	22	96	17.6	2,230
Zorro	42	21	96	17.9	2,680
Mean	43	23	95	18.0	2,732
CV %	3.0	7.0	5.0	6.0	17.4
LSD 0.10	2.0	2.4	NS	1.5	NS
Forest River (Walsh County)					
BKB 1312		19	106	19.0	1,550
BKB 1313		18	111	17.7	1,300
Carman Black		19	112	19.5	1,490
Eclipse		19	105	17.0	1,650
GTS-1103		20	113	18.5	1,570
Loreto		19	112	18.0	1,460
Super Jet		19	108	19.0	1,580
T-39		20	112	17.9	1,530
Zorro		20	107	16.8	1,560
Mean		19	110	18.2	1,521
CV %		11.0	3.0	5.4	32.1
LSD 0.10		6.0	4.0	1.0	NS

Prosper - Planted: May 24. Harvested: Sept. 26. Previous crop: small grain.

Hatton - Planted: June 12. Harvested: Sept. 25. Previous crop: sugarbeet.

Forest River - Planted: May 28. Harvested: Sept. 19. Previous crop: sugarbeet.

¹Days after planting.

Table 11. 2013 Dry Bean Variety Trial - Prosper, Hatton and Forest River, N.D. (NDSU) - Authors, J. Osorno, J. VanderWal and M. Kloberdanz.

Variety	Market Class	Days to Flower	Plant Height	Days to Maturity	100 Seed Weight	Seed Yield
Prosper (Cass County)		(days)	(inch)	(DAP) ¹	(gram)	(lb/a)
Matterhorn	Great Northern	58	24	102	33.8	2,980
Hime	Otebo	57	17	112	27.7	1,620
Sedona	Pink	58	28	106	37.8	2,710
Merlot	Red	56	24	107	37.7	2,880
Rio Rojo	Red	55	27	103	32.7	3,210
Mean		57	24	106	33.9	2,680
CV %		--	8.0	1.0	5.4	12.3
LSD 0.10		--	2.0	2.0	2.2	380
Hatton (Traill County)						
Aries	Great Northern	42	24	92	32.5	3,710
Gemini	Great Northern	38	16	90	33.7	2,700
Matterhorn	Great Northern	42	22	92	30.6	3,390
Orion	Great Northern	43	21	92	29.4	3,150
Rosetta	Pink	43	25	100	28.3	3,390
Sedona	Pink	48	25	97	31.9	2,470
Merlot	Red	48	25	99	31.9	2,600
Rio Rojo	Red	43	26	92	26.0	3,460
Canario 707	Yellow	43	21	107	46.1	2,720
Mean		43	23	96	32.3	3,066
CV %		2.0	7.0	3.0	6.6	12
LSD 0.10		1.0	2.0	3.0	2.3	440
Forest River (Walsh County)						
Matterhorn	Great Northern		18	102	33.1	2,670
Hime	Otebo		15	117	26.8	1,540
Sedona	Pink		19	113	34.0	1,760
Merlot	Red		21	114	33.3	1,970
Rio Rojo	Red		20	112	27.9	2,300
Mean			19	112	31.0	2,048
CV %			9.0	2.0	3.4	14.4
LSD 0.10			2.0	2.0	1.2	380

Prosper - Planted: May 24. Harvested: Sept. 26. Previous crop: small grain.

Hatton - Planted: June 12. Harvested: Sept. 25. Previous crop: sugarbeet.

Forest River - Planted: May 28. Harvested: Sept. 19. Previous crop: sugarbeet.

¹Days after planting.

Table 12. 2013 Dry Bean Variety Trial - Park Rapids and Perham, Minn. (NDSU) - Authors, J. Osorno, J. VanderWal and M. Kloberdanz.

Variety	Market Class	Plant Height	Days to Maturity	100 Seed Weight	Seed Yield
Park Rapids, Minn.		(inch)	(DAP) ¹	(gram)	(lb/a)
Carman Black	Black	22	108	22.2	2,650
Eclipse	Black	20	106	20.0	3,360
GTS-1103	Black	22	110	22.3	3,810
Loreto	Black	22	113	23.9	2,630
Medalist	Navy	24	111	18.1	2,740
Merlin	Navy	19	110	19.9	2,390
Nautica	Navy	19	111	19.8	3,100
OB-1723-06	Navy	23	113	19.5	3,340
Portage	Navy	19	109	23.2	2,960
Rexeter	Navy	20	116	24.6	3,030
GTS-904	Pinto	24	108	41.1	2,930
GTS-907	Pinto	24	105	43.2	2,740
La Paz	Pinto	23	106	36.3	2,720
Lariat	Pinto	25	107	40.4	2,540
Sinaloa	Pinto	22	106	38.5	2,980
Stampede	Pinto	20	105	38.6	2,770
Windbreaker	Pinto	22	107	43.2	3,210
Mean		22	109	29.1	2,935
CV %		9.0	1.0	5.9	11.4
LSD 0.10		5.0	2.0	2.1	340
Perham, Minn.					
Carman Black	Black	25	100	23.0	2,270
Eclipse	Black	24	96	21.4	2,170
GTS-1103	Black	26	96	21.8	2,200
Loreto	Black	28	102	22.2	2,440
Medalist	Navy	26	101	18.6	1,560
Merlin	Navy	25	98	19.1	1,860
Nautica	Navy	24	96	19.1	1,410
OB-1723-06	Navy	27	100	17.7	2,100
Portage	Navy	24	96	22.7	2,290
Rexeter	Navy	24	106	20.8	1,930
Hime	Otebo	17	105	26.0	1,170
GTS-904	Pinto	25	95	40.0	2,550
GTS-907	Pinto	25	95	40.5	2,140
La Paz	Pinto	26	96	37.2	2,350
Lariat	Pinto	26	95	41.2	1,950
Sinaloa	Pinto	28	96	37.8	2,950
Stampede	Pinto	23	97	39.0	2,380
Windbreaker	Pinto	20	96	40.3	2,680
Mean		25	98	28.2	2,133
CV %		8.0	2.0	5.3	16.5
LSD 0.10		5.0	2.0	1.6	390

Planted: May 26. Harvested: Sept. 23. Previous crop: corn.

Planted: June 3. Harvested: Sept. 22. Previous crop: potato.

¹Days after planting.

Table 13. 2013 Dry Bean Variety Trial - Dryland - Carrington - Authors, M. Ostlie, S. Schaubert and T. Indergaard.

Variety	Market Class	Maturity (DAP) ³	Growth Habit ¹ (1-9)	Direct Harvest ² (%)	100 Seed Weight (gram)	Seeds/ Pound (seeds)	Seed Yield	
							2013	3-yr. Avg.
Eclipse	Black	87	6.8	73	17.7	2,573	2,768	2,420
Loreto	Black	89	7.0	78	18.1	2,513	2,159	2,102
Zorro	Black	89	6.5	78	18.2	2,503	2,460	2,266
Avalanche	Navy	88	6.3	70	17.6	2,579	2,007	2,064
Ensign	Navy	87	4.0	55	17.3	2,638	2,159	2,439
Medalist	Navy	89	6.0	75	16.5	2,763	2,030	2,289
Navigator	Navy	89	6.5	70	16.5	2,750	2,037	--
T9905	Navy	88	6.3	70	17.9	2,539	2,247	--
Vista	Navy	88	6.8	75	16.1	2,835	2,243	2,259
Sedona	Pink	90	3.0	48	27.9	1,646	1,892	2,122
La Paz	Pinto	88	6.8	73	30.4	1,495	2,806	2,683
Lariat	Pinto	88	5.3	65	32.7	1,390	2,711	2,728
Maverick	Pinto	85	3.8	53	31.0	1,464	2,621	2,422
Medicine Hat	Pinto	85	4.5	58	34.4	1,325	2,571	2,210
ND-307	Pinto	87	5.3	63	33.6	1,354	2,720	2,656
Sinaloa	Pinto	86	4.3	58	29.7	1,536	2,630	--
Stampede	Pinto	86	6.5	70	32.3	1,408	2,539	2,475
Windbreaker	Pinto	84	4.5	55	33.2	1,374	2,483	2,456
Merlot	Small Red	89	6.0	70	30.0	1,518	2,037	2,154
Rio Rojo	Small Red	88	6.3	70	25.3	1,795	2,055	--
Mean		87	5.6	66	24.8	2,000	2,359	2,359
CV %		--	13.3	10.8	6.1	6.0	17.5	--
LSD 0.10		--	0.9	8.0	1.8	141	477	--

Planted: June 3. Harvested: Sept. 13. Previous crop: Spring Wheat. See footnotes below.

Table 14. 2013 Dry Bean Variety Trial - Irrigated - Carrington - Authors, M. Ostlie, B. Smith and T. Ingebretson.

Variety	Market Class	Maturity (DAP) ³	Growth Habit ¹ (1-9)	Direct Harvest ² (%)	Seeds/ Pound (seeds)	100 Seed Weight (gram)	Seed Yield	
							2013	3-yr. Avg.
Eclipse	Black	99	7.3	80	2,464	18.5	3,463	2,668
Loreto	Black	102	4.8	70	2,412	18.9	2,971	2,513
Zorro	Black	101	5.5	70	2,428	18.7	3,374	2,438
Avalanche	Navy	102	5.5	73	2,394	19.0	2,895	2,480
Ensign	Navy	101	2.8	46	2,250	20.2	3,308	2,781
Medalist	Navy	102	6.5	73	2,521	18.0	3,920	3,069
Navigator	Navy	102	7.8	81	2,469	18.4	3,603	--
T9905	Navy	103	5.0	68	2,055	22.1	3,984	--
Vista	Navy	102	5.5	71	2,597	17.5	3,442	2,831
Sedona	Pink	100	2.5	40	1,319	34.4	2,737	2,442
La Paz	Pinto	99	5.3	69	1,405	32.4	3,656	3,156
Lariat	Pinto	100	4.3	59	1,333	34.3	3,588	3,377
Maverick	Pinto	97	1.5	28	1,397	32.6	2,903	2,521
Medicine Hat	Pinto	97	4.5	61	1,235	36.8	3,827	2,677
ND-307	Pinto	97	4.3	58	1,348	33.7	2,640	2,480
Sinaloa	Pinto	97	5.0	66	1,351	33.7	3,519	--
Stampede	Pinto	98	5.0	68	1,401	32.5	3,499	3,001
Windbreaker	Pinto	97	2.3	40	1,325	34.4	3,579	3,110
Merlot	Small Red	101	4.8	68	1,397	32.7	2,785	2,307
Rio Rojo	Small Red	100	5.0	65	1,607	28.3	3,989	--
Mean		100	4.7	63	1,835	26.9	3,384	2,741
CV %		1.2	19.6	10.6	5.2	6.2	11.2	--
LSD 0.10		1.4	1.1	8.0	113	2.0	442	--

Planted: June 3. Harvested: Sept. 30. Previous crop: spring wheat.

¹Growth Habit : Scored on scale of 1 to 9, with 1 = a vining plant type, pods low to ground, short stature; 9 = very upright plant upright structure, pods held off ground.²Direct Harvest: Relative score to estimate percent beans that would be successfully harvested in a direct/straight harvest system.³Days after planting.

Table 15. 2013 Dry Bean Variety Trial - Irrigated - Oakes (Carrington REC) - Author, L. Besemann.

Variety	Market Class	Maturity (DAP) ¹	Seeds/ Pound	100 Seed Weight (gram)	Test Weight (lb/bu)	Seed Yield	
						2013	2-yr. Avg.
						------(lb/ac)-----	
Eclipse	Black	88	1,964	23.1	61.3	3,130	3,447
Loreto	Black	89	2,057	22.1	62.6	2,880	--
Zorro	Black	90	1,925	23.6	61.3	3,278	3,639
Avalanche	Navy	89	2,092	21.7	63.7	2,513	2,427
Ensign	Navy	88	1,910	23.8	63.2	3,137	2,808
Medalist	Navy	91	2,419	18.8	63.7	3,320	2,762
Navigator	Navy	89	2,088	21.8	63.2	2,848	2,551
Norstar	Navy	90	2,268	20.0	65.0	2,199	1,886
T9905	Navy	90	1,934	23.5	63.2	3,883	3,369
Vista	Navy	91	2,211	20.6	63.7	3,363	2,845
Hime	Otebo	99	1,640	27.9	63.5	2,186	3,073
Sedona	Pink	93	1,090	41.7	59.1	3,226	3,778
La Paz	Pinto	91	1,146	39.7	59.7	3,440	3,390
Lariat	Pinto	97	1,151	39.5	57.6	3,659	3,535
Mariah	Pinto	93	1,082	42.0	58.5	2,925	--
Maverick	Pinto	92	1,078	42.2	57.5	3,206	3,104
Medicine Hat	Pinto	89	1,034	43.9	57.0	3,385	2,830
ND-307	Pinto	91	1,063	42.7	55.8	3,107	3,182
Stampede	Pinto	91	1,171	38.9	57.0	3,020	2,972
Windbreaker	Pinto	87	1,040	43.7	57.8	3,630	3,378
Merlot	Small Red	98	1,215	37.4	58.0	2,713	3,392
Rio Rojo	Small Red	89	1,265	35.9	64.8	3,285	--
Mean		91	1,584	31.6	60.6	3,106	3,072
CV %		0.5	3.5	3.5	1.0	10.2	--
LSD 0.10		1.5	64	1.3	0.7	374	--

Planted: May 31.

¹Days after planting.

Table 16. 2013 Dry Bean Variety Trial - Langdon - Authors, B. Hanson and T. Hakanson.

Variety	Market Class	Maturity (DAP) ¹	100 Seed Weight (gram)	Seed Yield				
				2011	2012	2013	2-yr. Avg.	3-yr. Avg.
La Paz	Pinto	100	32.8	3,172	3,510	3,324	3,417	3,335
Lariat	Pinto	101	35.6	3,124	3,697	2,832	3,265	3,218
Mariah	Pinto	96	34.1	--	--	2,960	--	--
Maverick	Pinto	95	33.2	--	3,079	2,860	2,970	--
Medicine Hat	Pinto	95	35.5	3,024	2,823	2,600	2,712	2,816
ND-307	Pinto	99	36.4	2,428	3,257	2,792	3,025	2,826
Stampede	Pinto	100	36.6	3,032	3,423	2,720	3,072	3,058
Windbreaker	Pinto	99	37.2	3,076	3,457	2,328	2,893	2,954
Merlot	Small Red	99	31.1	2,700	--	2,224	--	--
Rio Rojo	Small Red	99	25.9	--	--	2,252	--	--
Sedona	Pink	99	30.7	2,628	2,587	1,800	--	2,338
Mean		98	33.6	2,898	3,229	2,608	3,050	2,935
CV %		1.8	5.1	14.3	10.0	11.9	--	--
LSD 0.10		2.4	1.8	604	439	398	--	--

Variety	Market Class	Maturity (DAP) ¹	100 Seed Weight (gram)	Seed Yield				
				2011	2012	2013	2-yr. Avg.	3-yr. Avg.
Avalanche	Navy	101	18.3	2,868	3,092	1,952	2,522	2,637
Bolt	Navy	101	20.9	--	--	2,008	--	--
Ensign	Navy	98	18.9	3,472	3,524	2,852	3,188	3,283
Medalist	Navy	101	16.3	3,268	2,996	2,292	2,644	2,852
Mist	Navy	104	18.0	--	--	2,192	--	--
Nautica	Navy	101	16.2	--	--	2,372	--	--
Navigator	Navy	102	17.2	--	2,980	2,132	2,556	--
Norstar	Navy	104	17.9	--	--	1,612	--	--
Rexeter	Navy	103	18.5	--	2,224	2,424	2,324	--
T9905	Navy	102	19.7	--	3,208	2,616	2,912	--
Vista	Navy	101	16.2	2,564	2,094	2,584	2,339	2,414
Eclipse	Black	100	18.0	3,664	2,503	2,568	2,536	2,912
Loreto	Black	101	17.6	--	2,788	2,332	2,560	--
Zorro	Black	101	20.7	3,080	2,166	2,580	2,373	2,609
Mean		101	18.2	3,153	2,758	2,323	2,595	2,784
C.V. %		1.8	5.1	14.3	10.1	11.9	--	--
LSD 0.10		2.4	1.8	604	381	398	--	--

Planted: May 29. Harvested: Sept. 24.

¹Days after planting.

Table 17. 2013 Dry Bean Variety Trial - Cavalier - (Langdon REC) - Authors, B. Hanson and T. Hakanson.

Variety	Market Class	Maturity (DAP) ¹	100 Seed Weight (gram)	Seed Yield				
				2011	2012 ²	2013	2-yr. Avg.	3-yr. Avg.
La Paz	Pinto	91	35.3	2,505	2,104	3,820	2,962	2,810
Lariat	Pinto	92	37.4	3,112	--	3,460	--	--
Mariah	Pinto	89	34.0	--	--	3,488	--	--
Maverick	Pinto	90	36.1	2,902	1,824	3,456	2,640	2,727
Medicine Hat	Pinto	88	38.1	2,815	1,768	3,348	2,558	2,644
ND020351-R	Pinto	90	36.8	--	1,416	3,408	2,412	--
ND-307	Pinto	90	38.1	2,990	1,720	3,540	2,630	2,750
Stampede	Pinto	90	37.3	2,983	2,012	3,348	2,680	2,781
Windbreaker	Pinto	91	38.3	2,883	2,256	3,392	2,824	2,844
Merlot	Small Red	95	37.0	2,260	1,212	2,968	2,090	2,147
Rio Rojo	Small Red	89	26.0	--	--	2,972	--	--
Sedona	Pink	90	33.9	2,672	1,816	2,700	2,258	2,396
Mean		90	35.7	2,791	1,792	3,325	2,562	2,637
CV %		1.4	3.6	17.0	13.6	6.9	--	--
LSD 0.10		1.8	1.3	--	319	319	--	--

Variety	Market Class	Maturity (DAP) ¹	100 Seed Weight (gram)	Seed Yield				
				2011	2012 ²	2013	2-yr. Avg.	3-yr. Avg.
Avalanche	Navy	91	19.7	2,514	2,412	3,440	2,926	2,789
Bolt	Navy	91	22.2	--	--	3,208	--	--
Ensign	Navy	92	21.2	2,544	2,164	3,728	2,946	2,812
Medalist	Navy	93	17.6	2,760	2,696	3,420	3,058	2,959
Mist	Navy	92	19.7	--	--	3,492	--	--
Nautica	Navy	92	18.0	--	--	3,204	--	--
Navigator	Navy	93	18.8	--	1,516	3,108	2,312	--
Norstar	Navy	92	18.0	--	--	3,092	--	--
Rexeter	Navy	97	19.9	--	1,760	3,516	2,638	--
T9905	Navy	93	21.1	--	2,220	3,484	2,852	--
Vista	Navy	93	17.1	2,641	2,164	3,432	2,798	2,746
Eclipse	Black	89	18.5	2,458	1,904	3,436	2,670	2,599
Loreto	Black	93	20.2	2,878	2,304	3,392	2,848	2,858
Zorro	Black	93	21.4	2,559	2,244	3,576	2,910	2,793
Mean		93	19.5	2,622	2,138	3,395	2,796	2,794
CV %		1.4	3.6	12.0	9.6	6.9	--	--
LSD 0.10		1.8	1.3	--	280	319	--	--

Planted: June 6. Harvested: Sept. 25.

¹Days after planting.²A fairly significant hail storm occurred on July 4 causing some damage. Drybeans were mostly in the R1 stage.

Drybeans recovered nicely but were later maturing than normal.

Table 18. 2013 Dry Bean Variety Trial - Hettinger - Author, J. Rickertsen.

Variety	Type	Days to Flowering (DAP) ¹	Plant Height (inch)	Plant Lodge (0-9) ²	100 Seed Weight (gram)	Test Weight (lb/bu)	Yield	
							2013	3 yr
							-----lb/a-----	
La Paz	Pinto	58	21	3	29.7	60.4	2,779	2,230
Lariat	Pinto	55	21	5	32.9	57.1	2,571	2,254
Mariah	Pinto	53	18	4	32.0	57.2	2,780	--
Maverick	Pinto	53	18	4	33.0	56.5	2,152	1,977
Medicine Hat	Pinto	53	19	4	34.1	54.7	2,409	2,002
ND-307	Pinto	55	19	4	34.0	55.4	2,813	--
Stampede	Pinto	55	19	4	31.3	55.2	2,552	2,008
Windbreaker	Pinto	54	19	3	35.9	55.1	2,216	1,934
Avalanche	Navy	55	20	3	19.6	58.9	2,571	1,892
Ensign	Navy	55	20	4	18.1	58.3	2,780	1,854
Medalist	Navy	55	21	1	16.3	59.6	2,562	1,754
Norstar	Navy	56	19	5	16.5	61.2	1,653	--
Navigator	Navy	54	22	1	15.4	59.5	2,505	--
Vista	Navy	57	22	3	15.1	59.4	1,994	1,658
T9905	Navy	57	20	3	17.4	59.9	3,082	--
Merlot	Sm Red	56	20	5	32.1	58.1	1,961	1,682
Rio Rojo	Sm Red	55	21	4	25.6	62.5	2,548	--
Sedona	Pink	59	21	5	29.9	54.1	1,533	994
Eclipse	Black	57	20	1	15.5	57.0	2,246	1,912
Loreto	Black	59	21	2	16.2	59.5	2,190	1,640
Zorro	Black	57	22	1	16.3	57.0	2,155	1,924
Mean		56	20	3	24.6	57.9	2,383	1,848
C.V. %		--	8.0	19.8	4.5	1.9	7.7	--
LSD 0.10		--	2.0	1.0	1.3	1.3	217	--

Planted: May 22. Harvested: Sept. 13. Previous crop: spring wheat green fallow.

¹Days after planting.

²0 = no lodging, 9 = lying flat on ground.

Table 19. Pinto Bean Variety Descriptions.

Class and Cultivar	Origin	RM ¹	Plant Type ²
<u>PINTO</u>			
AC Island	Ag. Can.	ME	V
Baja	Provita	E	V
Buster	Seminis	ME	UV
Croissant	CSU	L	V
Durango	Provita	E	V
Galeena	Provita	L	V
GTS-903	GenTec	L	UV
GTS-904	GenTec	L	UV
GTS-907	GenTec	M	UV
La Paz	Provita	L	USV
Lariat	NDSU	L	USV
Long's Peak	CSU	L	USV
Mariah	Seminis	ME	UV
Maverick	NDSU	ME	V
Max	Idaho Seed Bean	E	V
Medicine Hat	Seminis	ME	UV
Monterrey	Provita	ME	USV
ND-307	NDSU	M	UV
Odyssey	Idaho Seed Bean	ME	V
Othello	USDA-Prosser	E	V
PIN 1012	Seminis	ME	--
PIN 1314	Seminis	ME	--
Santa Cruz	Provita	M	USV
Santa Fe	MSU	M	USV
Sequoia	Idaho Seed Bean	ML	USV
Sinaloa	Provita	ML	USV
Sonora	Provita	E	V
Stampede	NDSU	M	USV
Windbreaker	Seminis	M	UV

Not all entries appear in the table due to lack of information.

¹RM = Relative Maturity; E = Early; ME = Medium Early;

M = Medium; ML = Medium Late; L = Late.

²V = Vine; UV = Upright Vine; USV = Upright Short Vine; B = Bush.

Table 20. Navy Bean Variety Descriptions.

Class and Cultivar	Origin	RM ¹	Plant Type ²
<u>NAVY</u>			
Avalanche	NDSU	ME	USV
Bolt	Ag. Can.	-	-
CDC Whitecap	U. Sask	M	USV
Ensign	ADM-Seedwest	M	USV
GTS-544	GenTec	M	USV
GTS-564	GenTec	M	USV
HY 4181	Hyland	E	USV
Indi	ADM-Seedwest	M	USV
Lightning	U. of Guelph	M	UV
Medalist	Provita	M	UV
Merlin	Provita	M	USV
Mist	Ag. Can.	-	-
Nautica	Ag. Can.	-	-
Nav 1200	Seminis	ML	USV
Nav 1246	Seminis	ML	USV
Norstar	NDSU	ME	USV
OB-1723-06	GenTec	M	UV
Portage	Ag. Can.	ME	USV
Regent	Ag. Can.	ME	UV
Reliant	GenTec	ME/M	-
Rexeter	U. of Guelph	-	USV
Seabiskit	ADM	ME	USV
T9903	Hyland	ME	USV
T9905	Hyland	ME	USV
Vigilant	Provita	ME	USV
Viscount	GenTec	L	USV
Vista	Ag. Can.	ML	USV

Table 21. Small Red, Black, Pink and Yellow Bean Variety Descriptions.

Class and Cultivar	Origin	RM¹	Plant Type²
<u>SMALL RED</u>			
Carman	Idaho Seed Bean	E	V
Merlot	MSU	ME	USV
Rio Rojo	NDSU	ME	USV
Ryder	Rogers	M	USV
UI-259	U. Idaho	M	V
<u>BLACK</u>			
BKB 1312	Seminis	ME	USV
BKB 1313	Seminis	ME	USV
Blackhawk	MSU	L	USV
Carman Black	Ag. Can	E	USV
CDC Jet	U. Sask.	ME	USV
CDC Super Jet	U. Sask.	ME	USV
Condor	MSU	ML	USV
Eclipse	NDSU	M	USV
GTS-1103	GenTec	M	USV
Jaguar	MSU	M	USV
Loreto	Provita	M	USV
Shania	ADM-Seed West	-	UV
T-39	U. Calif.	M	USV
Zorro	MSU	L	USV
<u>PINK</u>			
Alberta Pink	U. Alberta	E	V
Floyd	Rogers	ML	V
ROG 922	Rogers	M	V
Rosalee	U. Sask.	E	V
Rosetta	MSU/ARS	M	USV
Sedona	MSU/ARS	M	USV
UI-537	U. Idaho	E	V
Viva	USDA-Prosser	M	V
<u>Yellow</u>			
Canario 107?	U.C. Davis	L	V

Not all entries appear in the table due to lack of information.

¹RM = Relative Maturity; E = Early; ME = Medium Early;

M = Medium; ML = Medium Late; L = Late.

²V = Vine; UV = Upright Vine; USV = Upright Short Vine; B = Bush.

Table 22. Light Red, Dark Red and White Kidney, Great Northern, Cranberry and Otebo Bean Variety Descriptions.

Class and Cultivar	Origin	RM¹	Plant Type²
<u>LT RED KIDNEY</u>			
Blush	WSU/USDA	ML	B
California Early (CELRK)	U. Calif.	E	B
Chinook 2000	MSU	M	B
Clouseau	Seminis	M	B
Foxfire	Rogers	ME	B
OAC Inferno	U. of Guelph	-	-
OAC Lyrik	U. of Guelph	ME	B
Pink Panther	Seminis	M	B
Sacramento	Agri-Sales	E	B
<u>DK RED KIDNEY</u>			
Cabernet	Rogers	ML	B
Drake	Seminis	M	B
Dynasty	U. of Guelph	ML	B
GTS-104	GenTec	M	B
GTS-106	GenTec	M	B
KDD 1013	Seminis	M	B
KDD 1030	Seminis	ME	B
Majesty	Ag. Can.	ML	B
Montcalm	MSU	ML	B
Red Rover	Seminis	ME	B
Redhawk	MSU	M	B
<u>WHITE KIDNEY</u>			
Beluga	MSU	M	B
Lassen	Agri-Sales	E	B
Silvercloud	WSU/USDA	E	B
<u>GREAT NORTHERN</u>			
Aries	Provita	ME	-
Beryl	Rogers	M	V
Coyne	U. Nebraska	ML	V
Gemini	Provita	E	-
Matterhorn	MSU	ME	USV
Orion	Provita	E	V
<u>CRANBERRY</u>			
Bellagio	MSU	ML	V
<u>OTEBO</u>			
Fuji	MSU	E	B
Hime	SK Food	ME	B

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