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North Dakota Dry Bean Variety Trial Results for 2016 and Selection Guide

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List of Tables

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North Dakota Bean Production

Dry edible beans have been a significant crop in eastern and east-central North Dakota during the past decades. Acreage for the past 14 years is shown in Table 1, with production by classes in Table 2.

Table 1. North Dakota Dry Edible Bean Harvested Acreage, 2003 to 2016.

Year	Acreage
2003	520,000
2004	475,000
2005	565,000
2006	640,000
2007	665,000
2008	640,000
2009	580,000
2010	770,000
2011	380,000
2012	685,000
2013	430,000
2014	615,000
2015	635,000
2016	570,000

Source: North Dakota Agricultural Statistics Service – USDA.

Table 2. North Dakota Dry Edible Bean Production by Commercial Class, 2003 to 2015.

Year	Pinto	Navy
	(Cwt)	(Cwt)
2003	5,864,000	1,164,000
2004	3,561,000	650,000
2005	6,530,000	1,330,000
2006	4,988,000	1,585,000
2007	7,606,000	1,636,000
2008	6,660,000	2,087,000
2009	6,106,000	1,263,000
2010	7,543,000	1,958,000
2011	2,709,000	1,125,000
2012	7,610,000	2,215,000
2013	4,765,000	1,299,000
2014	5,677,000	1,622,000
2015	4,932,000	1,694,000

Source: North Dakota Agricultural Statistics Service – USDA.

2016 Growing Season Weather Summary for North Dakota

Table 3. April-September 2016 Average Temperature and Precipitation Rankings for Selected North Dakota Locations.

City	Temperature Ranking	Precipitation Ranking
Bowman	59.9 F (39th Warmest Period Since 1915)	13.4 inches (34th Wettest Period Since 1915)
Bismarck	61.9 F (28th Warmest Period Since 1875)	18.7 inches (11th Wettest Period Since 1875)
Cavalier	58.1 F (43rd Warmest Period Since 1934)	27.6 inches (The Wettest Period Since 1927)
Fargo	63.1 F (8th Warmest Period Since 1881)	16.1 inches (66th Wettest Period Since 1881)
Minot Exp. Station	59.8 F (24nd Warmest Period Since 1905)	15.4 inches (37th Wettest Period Since 1905)
Williston Exp. Station	61.7 F (11th Warmest Period Since 1894)	12.0 inches (44th Wettest Period Since 1894)
North Dakota Average	**60.0 F (25th Warmest Period Since 1895)**	**17.4 in. (12th Wettest Period Since 1894)**

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

[1]Statewide values are calculated based on all available locations in North Dakota rather than the mathematical average of the list above.

2016 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 Experiment Station locations 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 to 95 percent probability (0.10 and 0.05 level, respectively), 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.

Trials are supported in part by fees collected from entrants of private varieties. We acknowledge the support for Juan Osorno's breeding project from the Northarvest Bean Growers Association.

Table 4. 2016 Pinto Bean Variety Trial - Hatton - Authors, J. Osorno, J. VanderWal and M. Kloberdanz.

Variety	Days to Maturity	Plant Height	100 Seed Weight	Seed Yield
	(DAP)[1]	(inch)	(gram)	(lb/a)
Centennial	101	26	40.4	3,290
Cowboy	94	29	40.9	3,240
El Diablo Fu	92	26	41.1	3,220
GTS-904	98	21	41.6	3,200
GTS-907	92	21	37.4	3,130
La Paz	96	28	35.5	3,130
Lariat	102	26	40.2	3,090
Maverick	93	21	40.5	3,070
Monterrey	96	27	37.5	3,010
ND-307	97	24	43.0	3,000
Othello	94	16	40.7	2,980
ND Palomino	100	24	41.6	2,960
Radiant	95	28	39.3	2,950
Rough Rider (SV6533GR)	93	26	40.8	2,860
Santa Cruz	96	28	39.2	2,860
Sinaloa	99	27	41.3	2,840
Stampede	97	24	40.7	2,830
SV6139GR	91	24	35.2	2,830
Torreon	93	28	40.9	2,830
Vibrant	95	26	40.8	2,820
Windbreaker	91	20	40.3	2,370
Mean	95	25	39.9	2,977
CV %	3.0	7.0	6.7	12.2
LSD 0.05	4	7.0	3.7	500
LSD 0.10	3	5.9	3.1	419

Planted: June 8. Previous crop: sugarbeet.

[1]Days after planting.

Table 5. 2016 Dry Bean Variety Trial - Hatton - Authors, J. Osorno, J. VanderWal and M. Kloberdanz.

Variety	Market Class	Days to Maturity	Plant Height	100 Seed Weight	Seed Yield
		(DAP)[1]	(inch)	(gram)	(lb/a)
GTS-104	Dark Red Kidney	101	22	45.8	1,680
Aries	Great Northern	93	23	39.2	2,500
Draco	Great Northern	106	22	40.2	2,630
Matterhorn	Great Northern	101	22	38.4	2,030
Orion	Great Northern	99	21	40.8	2,500
Powderhorn	Great Northern	89	23	34.0	2,110
Taurus	Great Northern	102	21	40.7	2,690
Samurai	Otebo	105	24	30.8	3,230
Floyd	Pink	90	17	34.5	1,830
Rosetta	Pink	97	23	37.4	2,420
Sedona	Pink	99	20	41.9	2,190
Merlot	Small Red	98	22	41.2	2,050
Ruby	Small Red	104	21	34.6	2,770
Viper	Small Red	103	23	31.8	2,860
Mean		99	22	38.0	2,392
CV %		4.0	7.0	5.2	10.3
LSD 0.05		5	6.0	2.9	350
LSD 0.10		4	5.0	2.4	293

Planted:June 8. Previous crop: sugarbeet.

[1]Days after planting.

Table 6. 2016 Navy Bean Variety Trial - Hatton - Authors, J. Osorno, J. VanderWal and M. Kloberdanz.

Variety	Days to Maturity	Plant Height	100 Seed Weight	Seed Yield
	(DAP)[1]	(inch)	(gram)	(lb/a)
Alpena	98	26	20.3	3,300
Blizzard	98	28	21.6	3,170
DS105W0	101	27	21.9	3,180
Ensign	100	24	23.2	2,880
Fathom	103	24	22.3	3,140
Light House	101	23	23.1	2,900
Medalist	99	24	20.7	3,290
Mist	103	22	23.4	2,720
Nautica	102	25	20.3	2,970
OB-1723-03	103	28	19.7	3,140
SV1893GH	103	23	23.9	2,810
T9903	97	22	24.9	3,100
T9905	102	27	24.6	3,690
Vigilant	95	26	21.9	2,850
Vista	103	25	19.5	2,700
Mean	101	25	22.1	3,056
CV %	3.0	7.0	6.3	12.3
LSD 0.05	4	6.0	2.0	NS
LSD 0.10	3	5.0	1.7	NS

Planted: June 8. Previous crop: sugarbeet.

[1]Days after planting.

Table 7. 2016 Black Bean Variety Trial - Hatton - Authors, J. Osorno, J. VanderWal and M. Kloberdanz.

Variety	Days to Maturity	Plant Height	100 Seed Weight	Seed Yield
	(DAP)[1]	(inch)	(gram)	(lb/a)
Black Cat	97	25	20.5	2,920
Eclipse	94	24	21.3	2,880
GTS-1103	102	24	20.6	2,790
Jet	96	22	22.3	2,220
Knight Rider	102	23	22.1	2,750
Loreto	103	22	22.5	2,770
Obsidian (SV6894GB)	95	23	23.8	2,810
Super Jet	95	23	22.3	2,410
T-39	97	20	21.4	2,480
Zenith	100	23	21.8	2,420
Zorro	97	24	22.4	2,100
Mean	98	23	21.9	2,595
CV %	2.0	7.0	4.0	15.3
LSD 0.05	3	6.0	1.2	580
LSD 0.10	3	5.0	1.0	485

Hatton - Planted: June 8. Previous crop: sugarbeet

[1]Days after planting.

Table 8. 2016 Kidney Bean Variety Trial - Park Rapids, Minn. - Authors, J. Osorno, J. VanderWal and M. Kloberdanz.

Variety	Market Class	Days to Maturity	Plant Height	100 Seed Weight	Seed Yield
		(DAP)[1]	(inch)	(gram)	(lb/a)
Cabernet	Dark Red Kidney	91	15	41.1	1,190
Chaparral	Dark Red Kidney	94	15	40.0	1,700
Dynasty	Dark Red Kidney	95	20	52.7	2,140
GTS-104	Dark Red Kidney	94	18	45.3	1,930
Montcalm	Dark Red Kidney	93	17	46.1	1,750
Red Rover	Dark Red Kidney	91	18	43.9	1,460
Redhawk	Dark Red Kidney	90	17	41.0	1,250
Talon	Dark Red Kidney	92	17	42.4	1,660
Big Red	Light Red Kidney	90	17	49.8	1,920
Celrk	Light Red Kidney	86	13	48.2	1,070
Foxfire	Light Red Kidney	89	16	44.4	1,860
Inferno	Light Red Kidney	97	19	53.4	2,250
Pink Panther	Light Red Kidney	91	17	51.7	1,960
Ronnie's Red	Light Red Kidney	94	20	53.7	2,020
Rosie	Light Red Kidney	101	19	47.7	1,660
Beluga	White Kidney	95	18	44.7	1,270
Snowdon	White Kidney	85	15	49.6	1,490
Yeti	White Kidney	96	18	46.9	1,400
Mean		92	17	46.8	1,666
CV %		3.0	7.0	4.7	17.6
LSD 0.05		4	4.0	3.1	420
LSD 0.10		3	3.3	2.6	352

Planted: June 2. Previous crop: corn.

[1]Days after planting.

Table 9. 2016 Kidney Bean Variety Trial - Perham, Minn. - Authors, J. Osorno, J. VanderWal and M. Kloberdanz.

Variety		Days to Maturity	Plant Height	100 Seed Weight	Seed Yield
		(DAP)[1]	(inch)	(gram)	(lb/a)
Cabernet	Dark Red Kidney	92	15	44.4	800
Chaparral	Dark Red Kidney	94	17	38.6	1,750
Dynasty	Dark Red Kidney	94	20	52.7	1,490
GTS-104	Dark Red Kidney	97	20	45.9	1,380
Montcalm	Dark Red Kidney	99	19	48.4	1,300
Red Rover	Dark Red Kidney	91	19	43.4	1,070
Redhawk	Dark Red Kidney	90	18	42.2	940
Talon	Dark Red Kidney	93	17	44.7	1,040
Big Red	Light Red Kidney	90	17	50.9	1,340
Foxfire	Light Red Kidney	92	18	43.5	1,260
Inferno	Light Red Kidney	102	19	51.1	1,580
Pink Panther	Light Red Kidney	93	17	51.7	1,580
Ronnie's Red	Light Red Kidney	94	21	53.2	1,540
Rosie	Light Red Kidney	103	19	46.1	1,650
Beluga	White Kidney	93	19	41.8	880
Snowdon	White Kidney	87	19	54.6	1,530
Yeti	White Kidney	93	19	46.8	1,150
Mean		94	18	47.1	1,311
CV %		3.0	7.0	4.7	20.8
LSD 0.05		3	5.0	3.1	380
LSD 0.10		3	4.2	2.6	318

Planted: June 2. Previous crop: corn.

[1]Days after planting.

Table 10. 2016 Dry Bean Variety Trial - Park Rapids, Minn. - Authors, J. Osorno, J. VanderWal and M. Kloberdanz.

Variety	Market Class	Days to Maturity	Plant Height	100 Seed Weight	Seed Yield
		(DAP)[1]	(inch)	(gram)	(lb/a)
Eclipse	Black	94	22	19.5	2,580
GTS-1103	Black	94	22	21.5	2,480
Jet	Black	92	19	19.7	1,710
Knight Rider	Black	104	17	19.3	1,460
Loreto	Black	94	22	19.7	2,000
Super Jet	Black	92	17	19.7	1,670
Medalist	Navy	93	22	16.8	2,430
OB-1723-03	Navy	103	20	17.2	2,760
T9905	Navy	97	22	21.7	2,160
El Diablo Fu	Pinto	89	18	35.0	1,820
GTS-904	Pinto	96	16	37.7	1,990
GTS-907	Pinto	91	18	33.9	1,670
La Paz	Pinto	93	19	36.0	1,880
Lariat	Pinto	94	20	37.4	1,830
Monterrey	Pinto	93	21	35.0	1,760
ND Palomino	Pinto	93	20	35.6	1,850
Sinaloa	Pinto	92	20	34.9	1,990
Stampede	Pinto	93	19	33.7	1,920
Windbreaker	Pinto	92	18	37.9	2,530
Mean		94	20	28.0	2,026
CV %		2.0	7.0	6.5	14.9
LSD 0.05		3	5.0	2.5	430
LSD 0.10		3	4.2	2.1	360

Planted: June 2. Previous crop: corn.
[1]Days after planting.

Table 11. 2016 Dry Bean Variety Trial - Perham, Minn. - Authors, J. Osorno, J. VanderWal and M. Kloberdanz.

Variety	Market Class	Days to Maturity	Plant Height	100 Seed Weight	Seed Yield
		(DAP)[1]	(inch)	(gram)	(lb/a)
Eclipse	Black	94	25	21.3	2,500
GTS-1103	Black	94	23	25.3	2,890
Jet	Black	96	22	21.0	1,650
Knight Rider	Black	102	22	20.7	1,790
Loreto	Black	96	22	21.4	1,500
Super Jet	Black	95	21	21.0	1,640
Medalist	Navy	96	24	19.8	1,850
OB-1723-03	Navy	95	22	17.9	2,390
T9905	Navy	95	23	23.7	1,770
El Diablo Fu	Pinto	87	22	38.9	2,090
GTS-904	Pinto	95	23	43.5	2,320
GTS-907	Pinto	92	20	39.5	2,400
La Paz	Pinto	94	27	39.7	2,290
Lariat	Pinto	95	22	38.6	1,970
Monterrey	Pinto	94	24	39.9	2,140
ND Palomino	Pinto	96	23	39.1	2,170
Sinaloa	Pinto	93	22	35.3	2,110
Stampede	Pinto	94	20	37.8	1,890
Windbreaker	Pinto	92	20	40.0	2,480
Mean		94	22	30.8	2,097
CV %		2.0	8.0	5.4	18.7
LSD 0.05		3	6.0	2.3	550
LSD 0.10		3	5.0	1.9	460

Planted: June 2. Previous crop: corn.
[1]Days after planting.

Table 12. 2016 Dry Bean Variety Trial - Dryland - Carrington - Authors, M. Ostlie, B. Schatz and G. Endres.

Variety	Market Class	Maturity	Growth Habit[1]	Direct Harvest[2]	Seed Protein	Seeds/ Pound	Test Weight	100 Seed Weight	Seed Yield 2016	Seed Yield 3-yr. Avg[3].
		(DAP)[4]	(1-9)	(%)	(%)	(seeds)	(lb/bu)	(gram)	--------(lb/a)--------	
Eclipse	Black	99	8.0	89	20	2,288	61.9	19.8	2,613	2,337
Loreto	Black	104	7.5	90	21	2,202	62.8	20.6	2,183	1,963
Zorro	Black	99	8.3	90	22	2,433	61.8	18.8	2,467	2,340
Montcalm	Dark Red Kidney	107	8.0	83	19	910	57.9	50.0	2,514	--
Talon	Dark Red Kidney	104	7.8	81	19	936	58.2	48.6	2,427	--
Pink Panther	Light Red Kidney	104	8.0	84	19	799	56.8	56.9	2,430	--
Rosie	Light Red Kidney	107	7.8	85	20	915	58.5	49.7	2,346	--
Ensign	Navy	102	5.0	75	22	2,127	63.0	21.4	2,769	2,215
Medalist	Navy	102	7.8	89	21	2,223	62.5	20.4	2,855	2,233
T9905	Navy	104	6.5	85	22	2,081	63.5	21.8	2,985	2,445
Vista	Navy	103	6.3	88	23	2,388	63.0	19.0	2,884	2,329
Rosetta	Pink	94	8.0	88	19	1,459	60.7	31.3	2,423	--
La Paz	Pinto	96	7.5	88	21	1,374	59.7	33.1	2,083	2,395
Lariat	Pinto	99	6.0	89	20	1,173	58.8	39.1	3,096	2,729
Maverick	Pinto	96	5.0	79	19	1,166	58.5	39.0	3,169	2,621
Monterrey	Pinto	99	7.3	88	20	1,277	60.3	35.6	2,712	--
ND-307	Pinto	100	7.3	85	21	1,090	57.1	42.3	3,243	2,589
ND Palomino	Pinto	98	7.0	84	22	1,204	58.9	37.7	3,217	--
Stampede	Pinto	97	7.8	89	20	1,240	59.0	36.7	3,090	2,634
Windbreaker	Pinto	95	5.0	83	21	1,167	57.8	39.0	3,385	2,729
Merlot	Small Red	98	7.0	87	19	1,217	60.2	37.4	2,575	2,178
Mean		100	7.1	85	20	1,508	60.0	34.2	2,736	2,410
CV %		2.4	10.2	3.5	3.1	5.5	0.9	5.2	12.7	11.3
LSD 0.05		3	1.0	4	0.9	121	0.7	2.4	486	456
LSD 0.10		3	0.9	3.5	0.8	101	0.6	2.0	406	378

Planted: May 20. Harvested: Sept. 14. Previous crop: corn.

[1]Growth Habit: Scored on scale of 1 to 9; 1 = longer vine, low-stature plant, pods lower to ground; 9 = very upright plant stature, pods held well off ground.

[2]Direct Harvest: A relative score to estimate the percent of beans that would be harvested successfully in a direct/straight harvest system.

[3]Three-year average is for 2013, 2015 and 2016 because no data are available for 2014.

[4]Days after planting.

Table 13. 2016 Dry Bean Variety Trial - Irrigated - Carrington - Authors, M. Ostlie, B. Schatz and G. Endres.

Variety	Market Class	Maturity	Growth Habit[1]	Direct Harvest[2]	White Mold[3]	Seed Protein	Seeds/ Pound	Test Weight	100 Seed Weight	Seed Yield 2016	Seed Yield 3-yr. Avg[4].
		(DAP)[5]	(1-9)	(%)	(%)	(%)	(seeds)	(lb/bu)	(gram)	--------(lb/a)--------	
Eclipse	Black	104	5.0	79	10	19.5	2,235	61.2	20.4	2,380	2,554
Loreto	Black	108	4.3	76	4	20.2	2,170	61.3	21.0	2,541	2,535
Zorro	Black	102	5.8	84	39	20.6	2,588	61.3	17.6	1,670	2,361
Montcalm	Dark Red Kidney	106	5.5	68	16	19.6	952	57.3	48.0	2,121	--
Talon	Dark Red Kidney	106	3.5	49	20	18.7	979	57.6	46.4	2,348	--
Pink Panther	Light Red Kidney	101	5.0	73	50	19.4	891	55.9	51.0	2,103	--
Rosie	Light Red Kidney	112	3.8	73	7	18.9	902	56.4	50.4	2,274	--
Ensign	Navy	104	2.5	61	25	22.4	2,072	61.9	22.0	2,548	2,701
Medalist	Navy	109	2.8	73	4	19.5	2,329	62.0	19.5	2,881	2,865
T9905	Navy	107	4.0	70	9	22.4	1,951	61.6	23.3	2,944	3,000
Vista	Navy	109	2.8	70	9	21.6	2,350	60.8	19.3	2,412	2,639
Rosetta	Pink	100	6.0	84	9	19.8	1,264	59.7	36.0	2,663	--
La Paz	Pinto	105	4.8	75	16	19.6	1,162	59.0	39.1	3,277	3,236
Lariat	Pinto	104	2.3	69	19	20.0	1,038	57.4	44.0	2,713	3,097
Maverick	Pinto	101	1.0	55	25	20.1	1,101	57.6	41.4	2,450	2,818
Monterrey	Pinto	105	5.3	81	14	19.8	1,165	58.4	39.0	2,835	--
ND-307	Pinto	103	3.0	69	18	21.4	1,041	55.6	43.7	2,456	2,632
ND Palomino	Pinto	104	3.5	73	9	22.0	1,188	57.0	38.2	2,137	--
Stampede	Pinto	103	2.3	68	19	20.6	1,067	55.8	42.8	2,357	2,890
Windbreaker	Pinto	100	1.5	56	33	20.8	1,183	57.0	38.5	2,447	3,054
Merlot	Small Red	103	3.0	71	11	20.2	1,084	58.7	42.0	2,744	2,650
Mean		105	3.7	70	17.3	20.3	1,462	58.7	35.4	2,491	2,788
CV %		1.3	22.8	7.4	46.2	2.5	4.4	1.3	4.3	10.1	14.9
LSD 0.05		2	1.2	7	11	0.7	91	1.1	2.1	355	697
LSD 0.10		2	1.0	6	9	0.6	76	0.9	1.8	296	578

Planted: May 20. Harvested: Sept. 19. Previous crop: sugarbeet. The trial experienced a significant degree of hail damage on July 9.

[1]Growth Habit: Scored on scale of 1 to 9; 1 = longer vine, low-stature plant, pods lower to ground; 9 = very upright plant stature, pods held well off ground.

[2]Direct Harvest: A relative score to estimate the percent of beans that would be harvested successfully in a direct/straight harvest system.

[3]White Mold: An assessment of the incidence of plants that expressed some level of white mold (sclerotinia).

[4]Three-year average is for 2013, 2015 and 2016 because no data are available for 2014.

[5]Days after planting.

Table 14. 2016 Dry Bean Variety Trial - Irrigated - Oakes (Carrington REC) - Authors, K. Cooper, L. Besemann and H. Eslinger.

Variety	Market Class	Maturity	Seeds/ Pound	100 Seed Weight	Test Weight	Seed Yield	
						2016	3-yr. Avg.
		(DAP)[1]	(seeds)	(gram)	(lb/bu)	--------(lb/a)--------	
La Paz	Pinto	87	1,388	32.8	61.4	3,407	3,348
Lariat	Pinto	90	1,215	37.5	58.8	2,829	3,490
Maverick	Pinto	87	1,219	37.3	59.1	3,301	3,204
Monterrey	Pinto	88	1,305	34.9	61.3	2,947	--
ND-307	Pinto	89	1,108	41.0	57.0	3,534	--
ND Palomino	Pinto	91	1,155	39.3	55.2	2,633	--
Stampede	Pinto	85	1,262	36.1	60.2	3,438	3,347
Windbreaker	Pinto	85	1,181	38.5	59.6	3,830	3,709
Mean		88	1,228	37.2	59.1	3,240	3,419
CV %		2.1	4.0	3.8	1.6	9.8	--
LSD 0.05		3	71	2.1	1.4	465	--
LSD 0.10		2	59	1.7	1.1	385	--
Ensign	Navy	87	2,307	19.7	64.7	3,053	3,111
Medalist	Navy	90	2,609	17.5	65.1	2,271	2,920
T9905	Navy	89	2,221	20.5	65.3	2,987	3,251
Vista	Navy	89	2,664	17.1	65.3	2,593	2,903
Mean		89	2,450	18.7	65.1	2,726	3,025
CV %		2.9	5.2	5.3	0.7	13.3	--
LSD 0.05		4	205	1.6	0.7	579	--
LSD 0.10		3	166	1.3	0.6	469	--
Eclipse	Black Bean	83	2,497	18.2	63.9	3,130	3,114
Knight Rider	Black Bean	89	2,570	17.8	62.9	2,705	--
Loreto	Black Bean	89	2,543	17.9	63.1	2,734	3,051
Zorro	Black Bean	84	2,536	17.9	63.9	2,844	--
Montcalm	Dark Red Kidney	89	964	47.2	57.2	2,650	2,645
Talon	Dark Red Kidney	90	1,032	44.1	58.7	2,754	--
Pink Panther	Light Red Kidney	87	876	51.9	56.7	2,868	2,634
Rosie	Light Red Kidney	94	994	45.7	56.9	2,616	--
Rosetta	Pink	86	1,410	32.2	62.6	3,222	--
Merlot	Small Red	89	1,295	35.1	60.3	3,472	3,295
Mean		88	1,672	32.8	60.6	2,899	2,948
CV %		2	5.1	5.0	1.9	12.4	--
LSD 0.05		3	123	2.4	1.7	520	--
LSD 0.10		2	102	2.0	1.4	431	--

Planted: May 24. Harvested: Aug. 29, late maturing Sept. 6. Previous crop: spring wheat.

[1]Days after planting.

Table 15. 2016 Dry Bean Variety Trial - Cavalier - (Langdon REC) - Authors, B. Hanson, T. Hakanson and L. Henry.

Variety	Market Class	100 Seed Weight	Seed Yield				
			2014	2015	2016	2-yr. Avg.	3-yr. Avg.
		(gram)	----------(lb/a)----------				
Eclipse	Black	19.5	1,655	2,077	2,229	2,153	1,987
Loreto	Black	18.5	1,472	1,841	1,871	1,856	1,728
Zorro	Black	19.5	1,131	1,876	2,451	2,163	1,819
Dynasty	Dark Red Kidney	63.6	--	1,994	2,188	2,091	--
Montcalm	Dark Red Kidney	49.5	795	1,732	2,016	1,874	1,514
Talon	Dark Red Kidney	42.5	726	1,470	1,582	1,526	1,259
OAC Inferno	Light Red Kidney	52.5	--	2,101	2,647	2,374	--
Pink Panther[1]	Light Red Kidney	54.5	646	1,655	1,635	1,645	1,312
Rosie	Light Red Kidney	45.0	976	2,018	1,827	1,923	1,607
Ensign	Navy	21.5	1,426	1,964	2,121	2,043	1,837
Fathom	Navy	21.0	--	1,945	2,138	2,041	--
Medalist	Navy	18.5	1,793	1,452	1,775	1,613	1,673
Mist	Navy	21.5	--	1,963	2,161	2,062	--
Nautica	Navy	17.5	1,419	2,038	2,072	2,055	1,843
T9905	Navy	21.5	1,697	2,001	2,450	2,225	2,049
Vista	Navy	17.5	1,773	1,950	2,304	2,127	2,009
Rosetta	Pink	34.0	--	--	2,223	--	--
La Paz	Pinto	34.5	2,039	2,961	2,710	2,836	2,570
Lariat	Pinto	39.5	1,790	2,725	2,430	2,578	2,315
Maverick	Pinto	38.5	1,783	2,185	2,664	2,424	2,211
Monterrey	Pinto	37.0	--	--	2,901	--	--
ND Palomino	Pinto	37.0	--	--	2,590	--	--
Stampede	Pinto	35.0	1,579	2,519	2,505	2,512	2,201
Windbreaker	Pinto	39.0	1,812	3,130	2,325	2,727	2,422
Merlot	Small Red	38.5	1,558	2,106	1,890	1,998	1,851
Mean		33.5	1,448	2,077	2,228	2,129	1,900
CV %		--	12.3	14.0	10.7	10.7	13.0
LSD 0.05		--	262	496	394	475	411
LSD 0.10		--	315	413	328	393	342

Planted: May 25. Harvested: Sept. 29.

[1]Pink Pather had some preharvest shatter in 2015 and 2016.

Table 16. 2016 Dry Bean Variety Trial - Hettinger - Authors, J. Rickertsen and R. Olson.

Variety	Type	Plant Height	Plant Lodge[2]	Test Weight	Yield	
					2016	3-yr. Avg.
		(inch)	(0-9)	(lb/bu)	----------(lb/a)----------	
Eclipse	Black	16	2	51.7	1,429	1,773
Loreto	Black	16	3	53.8	1,284	1,586
Zorro	Black	17	2	51.5	1,333	--
Montcalm	Dark Red Kidney	16	3	47.9	937	--
Talon	Dark Red Kidney	16	3	47.2	952	--
Pink Panther	Light Red Kidney	17	4	44.9	1,025	--
Rosie	Light Red Kidney	16	3	49.2	1,196	--
Ensign	Navy	16	3	52.1	1,360	1,584
Medalist	Navy	16	2	52.5	1,282	1,512
T9905	Navy	16	3	51.8	1,438	1,698
Vista	Navy	17	3	54.1	1,251	1,560
Rosetta	Pink	17	3	50.4	1,261	--
La Paz	Pinto	17	5	48.7	1,318	1,827
Lariat	Pinto	16	7	48.1	1,252	1,785
Maverick	Pinto	16	5	48.6	1,070	1,536
Monterrey	Pinto	20	4	48.1	1,454	--
ND Palomino	Pinto	16	5	46.9	1,099	1,545
ND-307	Pinto	17	5	47.0	1,122	1,583
Stampede	Pinto	18	5	47.2	1,382	1,777
Windbreaker	Pinto	14	5	48.6	1,069	1,534
Merlot	Small Red	17	4	48.6	1,230	1,595
Mean		17	4	49.5	1,226	1,635
C.V. %		8.5	18.9	1.5	9.8	6.7
LSD 0.05		2	1.0	1.1	170	182
LSD 0.10		2	0.8	0.9	142	151

Planted: May 23. Harvested: Sept 13. Previous crop: canola.

[1]Days after planting.

[2]0 = no lodging, 9 = lying flat on ground.

Table 17. 2016 Dry Bean Variety Trial - Minot - Authors, E. Eriksmoen, J. Tarasenko and J. Effertz.

Variety	Market Class	Maturity	Plant Height	Plant Lodge[2]	Test Weight	100 Seed Weight	Yield		
							2016	2-yr. Avg.	3-yr. Avg.
		(DAP)[1]	(inch)	(0-9)	(lb/bu)	(gram)	----------(lb/a)----------		
Eclipse	Black	95	26	1	59.8	19	2,759	2,595	--
Loreto	Black	96	25	3	60.6	18	1,803	2,021	--
Zorro	Black	95	25	1	61.1	19	2,356	2,399	--
Montcalm	Dark Red Kidney	105	21	2	56.1	50	1,785	1,543	--
Talon	Dark Red Kidney	103	20	3	56.3	54	1,677	1,808	--
Pink Panther	Light Red Kidney	104	20	1	55.5	61	2,318	1,880	--
Rosie	Light Red Kidney	104	24	2	57.8	47	1,785	1,921	--
Ensign	Navy	98	25	5	60.2	21	2,639	2,374	2,038
Medalist	Navy	100	28	5	60.2	19	2,167	1,992	1,689
T9905	Navy	103	29	4	60.1	22	2,582	2,324	1,934
Vista	Navy	99	21	5	59.6	19	2,131	2,272	1,909
Rosetta	Pink	100	25	4	58.9	33	2,087	--	--
La Paz	Pinto	95	26	3	57.8	40	2,554	2,747	2,356
Lariat	Pinto	95	31	4	56.4	39	3,024	3,158	2,586
Maverick	Pinto	92	27	7	55.8	39	2,648	2,561	2,069
Monterrey	Pinto	94	29	4	58.2	37	2,986	--	--
ND Palomino	Pinto	98	29	5	55.5	41	2,519	--	--
Stampede	Pinto	95	30	1	56.5	39	2,731	2,477	2,123
Windbreaker	Pinto	95	24	6	55.7	41	2,922	2,962	2,454
Merlot	Small Red	97	25	6	58.3	38	2,627	2,368	--
Mean		98	26	4	58.0	35	2,405	2,318	2,129
C.V. %		2.5	14.6	47	1.3	6.5	9.0	12.5	11.6
LSD 0.05		4	6.0	3	1.2	4	359	615	425
LSD 0.10		3	5.0	2	1.0	3	299	507	350

Planted: June 2. Harvested: Sept. 19. Previous crop: spring wheat

[1]Days after planting.

[2]Lodging: 0 = no lodging, 9 = lying flat on ground.

Table 18. 2016 Pinto Bean Variety Trial - Irrigated - Williston - Authors, J. Jacobs and T. Tjelde.

Variety	Maturity	Canopy Height	Plant Lodge	Test Weight	100 Seed Weight	Seeds/ Pound	Yield	
							2016	2-yr. Avg.
	(DAP)[1]	(inch)	(0-9)	(lb/bu)	(gram)	(seeds)	--------(lb/a)--------	
La Paz	98	18	3	63	31.8	571	4,366	3,911
Lariat	98	17	3	61	35.4	513	3,945	3,924
Maverick	95	14	4	60	34.3	529	3,999	3,690
Monterrey	97	18	2	63	30.7	592	4,646	-
ND Palomino	99	16	2	59	35.3	514	4,686	3,808
ND-307	99	16	2	58	37.8	480	3,669	3,109
Stampede	95	17	1	61	31.0	586	3,097	3,259
Windbreaker	95	15	2	60	35.7	509	3,698	3,181
Mean	97	17	2	60	34.0	537	4,013	3,555
C.V. %	1.2	10.3	39.3	0.5	2.2	2.2	12.8	-
LSD 0.05	1.8	2.5	1.3	0.5	2.8	17.7	756	-
LSD 0.10	1.5	2.1	1.1	0.4	2.3	14.6	625	-

Table 19. 2016 Navy Bean Variety Trial - Irrigated - Williston - Authors, J. Jacobs and T. Tjelde.

Variety	Maturity	Canopy Height	Plant Lodge	Test Weight	100 Seed Weight	Seeds/ Pound	Yield	
							2016	2-yr. Avg.
	(DAP)[1]	(inch)	(0-9)	(lb/bu)	(gram)	(seeds)	--------(lb/a)--------	
Ensign	99	17.0	3	65.0	19.0	962	3,823	3,029
Medalist	98	17.0	1	65.0	16.5	1,098	4,261	3,300
T9905	100	17.0	2	64.0	19.7	921	4,632	3,411
Vista	98	17.0	1	65.0	16.3	1,112	4,451	3,448
Mean	98	16.9	2	64.8	17.8	1,030	4,042	3,165
C.V. %	2.4	7.8	28.4	0.6	4.0	3.5	7.7	-
LSD 0.05	4	2.1	0.8	0.6	2.8	57.4	528	-
LSD 0.10	3	1.7	0.6	0.5	2.3	46.5	428	-

Table 20. 2016 Dry Bean Variety Trial - Irrigated - Williston - Authors, J. Jacobs and T. Tjelde.

Variety	Market Class	Maturity	Canopy Height	Plant Lodge	Test Weight	100 Seed Weight	Seeds/ Pound	Yield	
								2016	2-yr. Avg.
		(DAP)[1]	(inch)	(0-9)	(lb/bu)	(gram)	(seeds)	--------(lb/a)--------	
Eclipse	Black	94	17.0	0	64.0	42	1,073	4,667	3,735
Loreto	Black	98	17.0	4	64.0	45	1,017	3,960	3,566
Zorro	Black	94	16.0	1	65.0	42	1,077	4,080	3,431
Montcalm	Dark Red Kidney	98	14.0	0	58.0	103	441	1,960	2,151
Talon	Dark Red Kidney	98	15.0	2	59.0	106	431	2,340	2,324
Pink Panther	Light Red Kidney	99	16.0	1	58.0	124	368	2,155	2,234
Rosie	Light Red Kidney	103	17.0	1	61.0	112	404	3,394	3,379
Rosetta	Pink	94	17.0	0	63.0	70	652	3,234	-
Merlot	Small Red	97	16.0	2	61.0	78	579	3,080	3,066
Mean		97	16.2	1	61.4	80	671	3,208	2,986
C.V. %		2.4	9.1	53.0	1.0	5.3	3.5	14.0	-
LSD 0.05		3	2.2	1.0	0.9	6.2	34.5	658	-
LSD 0.10		3	1.8	0.8	0.8	5.2	28.6	545	-

Planted: May 16. Harvested: Sept. 9. Previous crop: barley.

[1]Days after planting.

Table 21. Pinto Bean Variety Descriptions.

Class and Cultivar	Origin	RM[1]	Plant Type[2]
PINTO			
Buster	Seminis	ME	UV
Centennial	Colorado State Univ.	L	UV
Cowboy	Provita	--	--
Croissant	CSU	L	V
Durango	Provita	E	V
El Diablo Fu	GenTec	ME	USV
Eldorado	MSU	L	USV
Galeena	Provita	L	V
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
Marmot	Meridian Seeds	E	V
Maverick	NDSU	ME	V
Monterrey	Provita	ME	USV
ND Palomino	NDSU	ML	USV
ND-307	NDSU	M	UV
Odyssey	Idaho Seed Bean	ME	V
Othello	USDA-Prosser	E	V
Radiant	Provita	ML	USV
Roughrider	Seminis	--	--
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
SV6139GR	Seminis	--	--
Torreon	Provita	M	USV
Vibrant	Provita	E	USV
Windbreaker	Seminis	M	UV

[1]RM = Relative Maturity; E = Early; ME = Medium Early; M = Medium; ML = Medium Late; L = Late.

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

Table 22. Navy Bean Variety Descriptions.

Class and Cultivar	Origin	RM[1]	Plant Type[2]
NAVY			
Alpena	MSU	ME	USV
Avalanche	NDSU	ME	USV
Blizzard	Provita	M	USV
Bolt	Ag. Can.	M	USV
Cascade	Idaho Seed Bean	M	USV
CDC Whitecap	U. Sask	M	USV
DS105W0	Dow AgroSciences	--	--
Ensign	ADM-Seedwest	M	USV
Fathom	U. of Guelph	ML	USV
HY 4181	Hyland	E	USV
Indi	ADM-Seedwest	M	USV
Light House	U. of Guelph	M	USV
Lightning	U. of Guelph	M	UV
Medalist	Provita	M	UV
Merlin	Provita	M	USV
Mist	Ag. Can.	M	USV
Nautica	Ag. Can.	ML	USV
Norstar	NDSU	ME	USV
OB-1723-03	GenTec	--	--
Portage	Ag. Can.	ME	USV
Regent	Ag. Can.	ME	UV
Reliant	GenTec	ME/M	USV
Rexeter	U. of Guelph	L	USV
Seabiskit	ADM	ME	USV
SV1893GH	Seminis	--	--
T9903	Hyland	ME	USV
T9905	Hyland	M	USV
Vigilant	Provita	ME	USV
Viscount	GenTec	L	USV
Vista	Ag. Can.	ML	USV

[1]RM = Relative Maturity; E = Early; ME = Medium Early; M = Medium; ML = Medium Late; L = Late.

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

Table 23. Small Red, Black, Pink and Yellow Bean Variety Descriptions.

Class and Cultivar	Origin	RM[1]	Plant Type[2]
SMALL RED			
Merlot	MSU	ME	USV
Rio Rojo	NDSU	ME	USV
Ruby	Provita	M	USV
Viper	Provita	M	USV
BLACK			
Black Cat	Provita	ME	USV
Blackhawk	MSU	L	USV
Carman Black	Ag. Can	E	USV
Eclipse	NDSU	M	USV
GTS-1103	GenTec	M	USV
Jet	U. Sask.	E	USV
Knight Rider	Meridian Seeds	ME	USV
Loreto	Provita	M	USV
Obsidian	Seminis	--	--
Super Jet	U. Sask.	ME	USV
T-39	U. Calif.	M	USV
Zenith	MSU	M	USV
Zorro	MSU	L	USV
PINK			
Floyd	Rogers	ML	V
Rosetta	MSU/ARS	M	USV
Sedona	MSU/ARS	M	USV
YELLOW			
Canario	U.C. Davis	L	V
FLOR de JUNIO			
Desert Song	MSU	M	V
FLOR de MAYO			
Gypsy Rose	MSU	ML	V

[1]RM = Relative Maturity; E = Early; ME = Medium Early; M = Medium; ML = Medium Late; L = Late.

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

Table 24. Light Red, Dark Red and White Kidney, Great Northern, Cranberry and Otebo Bean Variety Descriptions.

Class and Cultivar	Origin	RM[1]	Plant Type[2]
LIGHT RED KIDNEY			
Big Red	Provita	--	--
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	ML	B
OAC Lyrik	U. of Guelph	ME	B
Pink Panther	Seminis	M	B
Rosie	NDSU	L	B
Ronnie's Red	Provita	ML	B
DARK RED KIDNEY			
Cabernet	Seminis	ML	B
Chaparral	Provita	ML	B
Dynasty	U. of Guelph	ML	B
GTS-104	GenTec	M	B
Majesty	Ag. Can.	ML	USV
Montcalm	MSU	ML	B
Red Rover	Seminis	ME	B
Redhawk	MSU	M	B
Talon	NDSU	M	B
WHITE KIDNEY			
Beluga	MSU	M	B
Silver Cloud	WSU/USDA	E	B
Snowdon	MSU	ME	B
Yeti	U. of Guelph	ML	B
GREAT NORTHERN			
Aries	Provita	ME	USV
Beryl	Rogers	M	V
Coyne	U. Nebraska	ML	V
Draco	Provita	M	USV
Gemini	Provita	E	V
Matterhorn	MSU	ME	USV
Orion	Provita	E	V
Powderhorn	MSU	M	USV
Taurus	Kelly Bean Co.	L	USV
CRANBERRY			
Bellagio	MSU	ML	V
OTEBO			
Fuji	MSU	E	B
Samurai	MSU	ML	UV

[1]RM = Relative Maturity; E = Early; ME = Medium Early; M = Medium; ML = Medium Late; L = Late.

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

For more information on this and other topics, see www.ag.ndsu.edu

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