

A654-23 (December 2023)

North Dakota Dry Bean

Variety Trial Results for 2023 and Selection Guide

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2023 Dry Bean Performance Trials

Information about dry bean variety performance can be accessed using the variety selection tool at <https://vt.ag.ndsu.edu/>.

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% 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. Coefficient of variation (CV) is expressed as a percentage and is a measure of variability within a trial. Large CVs indicate a large amount of variation that may not be attributed to differences in the varieties.

Kidney bean variety trial data from Perham and Staples, Minn., are not included due to high CVs for seed yield. At Staples, the high yield variability was due to significant disease pressure (root rots and bacterial wilt) and also herbicide injury. Data are available upon request from Juan Osorno, NDSU dry bean breeder.

In this publication's 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. When selecting a high-yielding and good-quality variety, use data that summarize several years and locations. Characteristics found in this publication to assist with dry bean variety evaluation include seed yield; plant maturity; plant height, lodging resistance and harvestability; seed size; and test weight.

Data for the varieties tested does not imply approval or endorsement by the authors or North Dakota State University. 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.

North Dakota Agricultural Experiment Station research scientists, specialists, technicians, administrative secretaries and students are acknowledged for field, lab and office work to generate and compile the data. A special thank you goes to Lisa Johnson, Dept. of Plant Sciences secretary, for compiling the contents of this publication.

The Northarvest Bean Growers Association is acknowledged for the support of the dry bean variety trials. Thanks to farmers who provided land for the variety trials: Brian Shanilec (Forest River, N.D.), Mark and Tim Sletten (Hatton, N.D.), and Cordell and Kenneth Huebsch (Perham and New York Mills, Minn.).

North Dakota Bean Production

Dry edible bean is an economically significant crop grown primarily in the eastern half of North Dakota. Harvest acreage and average yield for the past decade are shown in Table 1. Production recommendations can be found in the NDSU Extension publication A1133-20 “Dry Bean Production Guide.”

Year	Area harvested (1,000 acres)	Yield per acre (lb)	Area harvested (1,000 acres)	Yield per acre (lb)
	All classes		Pinto	
2013	430	1,650	295	1,620
2014	615	1,430	397	1,430
2015	635	1,400	360	1,370
2016	565	1,580	383	1,500
2017	685	1,810	457	1,840
2018	615	1,760	313	1,710
2019	550	1,400	328	1,370
2020	785	1,630	544	1,670
2021	620	1,030	425	990
2022	560	1,840	408	1,830
10-year average	605	1,550	391	1,530
	Black		Navy	
2013	37	1,480	70	1,860
2014	76	1,300	104	1,560
2015	136	1,210	99	1,720
2016	76	1,700	73	1,810
2017	85	1,700	82	2,010
2018	90	1,660	79	2,050
2019	121	1,410	71	1,460
2020	119	1,510	86	1,610
2021	81	980	71	1,150
2022	69	1,680	52	2,040
10-year average	89	1,460	79	1,730

Source: North Dakota Agricultural Statistics Service – USDA.

Table 2. 2023 Pinto, Black and Navy Bean Yield Expressed as a Percent of the Trial Mean at Each Location.

	Hatton	Forest River	Perham	Staples	Carrington	Carr. Irr.	Oakes Irr.	Hettinger	Langdon	Average ¹
PINTO	-----Yield in percent of the trial mean for each location-----									
Cowboy	91	114	91	101	118	102	104	95	105	102
La Paz	103	77	103	97	86	97	99	109	113	98
Lariat	--	--	--	--	108	109	99	94	110	104
Monterrey	105	119	113	112	98	104	98	116	105	108
ND Falcon	103	89	78	95	91	96	92	105	82	92
ND Palomino ²	103	93	90	90	107	93	99	84	92	95
ND Rodeo ²	116	102	112	66	92	107	109	98	87	99
Torreón	101	117	101	112	104	95	98	91	89	101
USDA Diamondback ²	98	119	--	--	100	96	102	102	98	102
USDA Rattler	102	98	--	--	108	124	102	107	114	108
Vibrant ²	79	90	--	--	100	87	94	109	104	95
Windbreaker	98	83	112	127	87	89	104	88	100	99
Trial Mean lb/a	2,331	1,740	2,111	1,759	2,701	3,071	4,053	1,877	3,102	

²Slow darkening.

	Hatton	Forest River	Perham	Staples	Carrington	Carr. Irr.	Oakes Irr.	Hettinger	Langdon	Average ¹
Black	-----Yield in percent of the trial mean for each location-----									
Black Tails	106	102	--	--	106	103	99	96	116	104
Eclipse	99	89	99	81	94	102	96	105	97	96
ND Twilight	92	95	101	119	99	103	101	103	81	99
Zorro	104	115	--	--	102	92	104	96	106	103
Trial Mean lb/a	2,340	1,704	2,228	1,429	2,825	3,166	4,085	1,908	3,029	

	Hatton	Forest River	Perham	Staples	Carrington	Carr. Irr.	Oakes Irr.	Hettinger	Langdon	Average ¹
Navy	-----Yield in percent of the trial mean for each location-----									
Armada	102	92	--	--	102	108	103	100	98	101
Blizzard	101	99	--	--	86	89	100	90	103	95
HMS Medalist	94	116	99	93	105	109	98	103	104	102
ND Polar	92	83	96	113	100	96	94	109	96	98
T9905	111	109	105	94	108	98	105	98	100	103
Trial Mean lb/a	2,569	1,571	2,139	1,175	2,778	3,404	4,130	1,761	3,125	

¹Average of contributing locations.

Table 3. 2019-23 Pinto Bean Variety Trials - Carrington: Direct Harvest Ratings¹ - Authors, G. Endres, M. Ostlie and K. Simons.

Variety	<u>Dryland</u>	<u>Irrigated</u>	9-year average (2019-23)
	4-year average (2019-20 and 2022-23)	5-year average (2019-23)	
	-----percent-----		
Cowboy	94	85	90
La Paz	93	83	88
Lariat	89	69	79
Monterrey	94	85	90
ND Falcon	96	85	91
ND Palomino	90	79	85
Torreón	96	89	93
Vibrant	91	86	90
Windbreaker	84	68	76

¹A visually evaluated score to estimate percent of seed that would be successfully direct harvested.

Table 4. 2023 Pinto Bean Variety Trial - Hatton - Authors, J. Osorno and M. Maisonneuve.

Variety	Days to Flower (DAP) ¹	Days to Maturity (DAP) ¹	Plant Height (inch)	100 Seed Weight (gram)	Seed Yield (lb/a)
Bronco ²	40	93	17	35.3	1,844
Cancun	46	93	22	38.3	2,373
Charro	48	98	22	37.9	2,993
Cowboy	44	88	19	30.6	2,128
EX1844-P	43	88	16	35.5	2,010
EX1845-P	45	92	16	31.3	1,748
EX2141-P	43	92	18	29.4	2,195
EX2143-P	43	92	19	28.8	2,060
EX2145-P	43	92	15	30.4	1,853
EX2146-P	43	93	19	31.7	2,106
EX2149-P	42	86	15	25.0	1,502
Gleam ²	44	90	19	27.8	2,129
La Paz	46	94	20	30.6	2,401
Monterrey	47	92	21	29.6	2,457
Mystic ²	43	88	19	34.1	1,770
ND Falcon	49	99	23	36.2	2,390
ND Palomino ²	42	96	19	33.4	2,407
ND Rodeo ²	46	97	19	36.7	2,708
NE2-17-37	42	99	19	34.1	2,006
NE4-17-10	41	92	21	37.7	1,689
NE4-17-6	40	95	19	38.0	1,877
Rustler	40	88	17	36.2	2,174
Santa Maria	42	88	19	32.6	2,277
Staybright ²	44	93	18	30.3	2,135
SV6139GR	42	89	16	30.6	2,351
Torreón	45	90	19	34.0	2,361
USDA Basin	45	93	22	34.4	1,978
USDA Diamondback ²	44	93	21	35.1	2,285
USDA Rattler	44	92	20	32.8	2,373
Vibrant ²	41	89	18	27.4	1,842
Wildcat ²	40	95	17	33.8	2,294
Windbreaker	43	91	16	34.1	2,291
Mean	44	93	19	33.8	2,225
CV %	3.1	2.7	10.0	7.3	18.7
LSD 0.05	2.2	4.2	8.0	4.1	693
LSD 0.10	1.6	3.0	5.0	2.9	487

Planted: May 30. Harvested: Sept. 12. Previous crop: corn.

¹Days after planting.²Slow darkening.

Table 5. 2023 Miscellaneous Dry Bean Variety Trial - Hatton - Authors, J. Osorno and M. Maisonneuve.

Variety	Market Class	Days to Flower (DAP) ¹	Days to Maturity (DAP) ¹	Plant Height (inch)	100 Seed Weight (gram)	Seed Yield (lb/a)
Vero	Cranberry	39	96	17	44.4	1,260
Amaranto	Cranberry	38	93	17	48.4	1,325
Draco	Great Northern	44	98	18	28.6	2,568
Andromeda	Great Northern	41	92	14	31.9	1,289
Coyne	Great Northern	41	92	15	30.0	1,857
Lyra	Great Northern	41	91	16	31.9	1,516
ND Pegasus	Great Northern	45	94	21	32.1	2,149
Panhandle Pride	Great Northern	45	92	16	31.4	1,568
Virgo	Great Northern	42	95	18	31.3	1,780
White Pearl	Great Northern	43	92	17	29.9	1,649
NE1-71-36	Great Northern	42	92	18	32.8	1,919
Floyd	Pink	39	96	13	32.7	1,967
Magnolia	Pink	41	93	18	34.6	1,969
Coral	Pink	46	93	18	28.8	1,677
Ruby	Small Red	45	94	17	25.5	2,605
Viper	Small Red	47	94	19	26.3	2,414
Merlot	Small Red	46	97	18	32.5	1,886
Mean		44	93	18	31.4	1,961
CV %		3.0	2.3	11.7	8.3	19.9
LSD 0.05		2.2	3.6	8.8	4.4	650
LSD 0.10		1.5	2.5	6.2	3.1	460

Planted: May 30. Harvested: Sept. 9. Previous crop: corn.

¹Days after planting.**Table 6. 2023 Navy Bean Variety Trial - Hatton - Authors, J. Osorno and M. Maisonneuve.**

Variety	Days to Flower (DAP) ¹	Days to Maturity (DAP) ¹	Plant Height (inch)	100 Seed Weight (gram)	Seed Yield (lb/a)
Armada	46	98	23	20.1	2,616
Au Sable	46	94	18	18.0	2,215
Blizzard	47	97	21	17.4	2,607
Charm	42	107	19	20.9	2,536
EX1802-N	45	95	19	18.0	2,194
EX1803-N	44	91	19	17.5	1,492
EX1804-N	44	93	18	16.7	2,068
EX2109-N	47	100	19	21.4	2,767
HMS Medalist	46	98	20	17.5	2,427
HMS Victory	45	93	21	17.6	2,477
Liberty	46	100	19	20.0	2,597
ND Polar	50	98	22	16.9	2,354
SV1893GH	46	103	19	21.2	2,420
T9905	47	102	19	21.8	2,843
Valiant	44	92	18	17.5	2,199
Mean	46	98	20	19.1	2,389
CV %	3.2	4.0	8.8	7.1	17.5
LSD 0.05	2.5	6.6	7.5	2.3	710
LSD 0.10	1.7	4.6	5.2	1.6	500

Planted: May 30. Harvested: Sept. 9. Previous crop: corn.

¹Days after planting.

Table 7. 2023 Black Bean Variety Trial - Hatton - Authors, J. Osorno and M. Maisonneuve.

Variety	Days to Flower	Days to Maturity	Plant Height	100 Seed Weight	Seed Yield
	(DAP) ¹	(DAP) ¹	(inch)	(gram)	(lb/a)
Ace	46	90	21	17.5	2,359
B3033350	45	95	19	18.3	1,904
B3036381	47	103	21	20.3	3,103
Black Tails	46	94	21	17.4	2,477
BlackBeard	48	99	24	21.4	2,972
Eclipse	47	92	20	17.5	2,308
ND Twilight	47	95	19	19.5	2,142
Nimbus	49	105	24	22.4	3,269
Spectre	47	106	22	21.9	3,389
Zorro	45	97	20	18.3	2,432
Mean	47	98	22	19.5	2,624
CV %	3.2	3.8	8.6	7.4	17.8
LSD 0.05	2.5	6.3	7.9	2.4	782
LSD 0.10	1.7	4.4	5.6	1.7	548

Planted: May 30. Harvested: Sept. 12. Previous crop: corn.

¹Days after planting.

Table 8. 2023 Black Bean Variety Trial - Forest River - Authors, J. Osorno and M. Maisonneuve.

Variety	Days to Flower	Days to Maturity	Plant Height	100 Seed Weight	Seed Yield
	(DAP) ¹	(DAP) ¹	(inch)	(gram)	(lb/a)
Black Tails	61	103	53	19.5	1,730
ACE	59	102	54	17.4	1,720
B3033350	53	96	48	17.2	1,735
B3036381	61	102	52	19.0	2,026
BlackBeard	61	101	60	20.1	1,777
Eclipse	61	98	48	17.2	1,514
ND Twilight	54	98	53	19.0	1,619
Nimbus	61	104	62	22.2	2,077
Spectre	61	104	57	20.2	1,932
Zorro	58	99	47	18.1	1,952
Mean	59	100	53	18.6	1,737
CV %	5.3	2.8	10.4	6.9	23.0
LSD 0.05	5.2	4.6	9.3	2.1	670
LSD 0.10	3.7	3.2	6.5	1.5	470

Planted: May 31. Harvested: Sept. 20. Previous crop: small grain.

¹Days after planting.

Table 9. 2023 Pinto Bean Variety Trial - Forest River - Authors, J. Osorno and M. Maisonneuve.

Variety	Days to Flower (DAP) ¹	Days to Maturity (DAP) ¹	100 Seed Weight (gram)	Seed Yield (lb/a)
Bronco ²	45	97	36.8	1,972
Cancun	55	97	40.5	1,969
Charro	53	98	33.9	1,984
Cowboy	49	99	33.7	1,977
EX1844-P	46	92	32.6	1,259
EX1845-P	46	90	28.3	1,411
EX2141-P	48	93	28.8	1,869
EX2143-P	48	95	33.6	1,073
EX2145-P	51	96	32.1	1,602
EX2146-P	48	91	32.3	1,978
EX2149-P	48	95	27.4	1,188
Gleam ²	48	95	31.6	1,835
La Paz	53	99	31.7	1,337
Monterrey	50	98	34.1	2,065
Mystic ²	47	93	35.5	1,670
ND Falcon	56	98	34.4	1,545
ND Palomino ²	50	98	31.7	1,613
ND Rodeo ²	50	98	34.4	1,773
NE2-17-37	48	97	35.8	1,423
NE4-17-10	51	101	36.4	1,074
NE4-17-6	43	94	36.5	1,794
Rustler	46	93	33.6	1,770
Santa Maria	50	95	35.9	2,067
Staybright ²	47	94	31.4	1,541
SV6139GR	47	92	30.6	1,712
Torreon	48	94	35.7	2,039
USDA Basin	49	94	34.3	2,173
USDA Diamondback ²	49	94	32.9	2,068
USDA Rattler	49	98	35.2	1,698
Vibrant ²	47	93	28.2	1,574
Wildcat ²	50	98	33.9	1,396
Windbreaker	51	97	34.3	1,452
Mean	49	96	33.8	1,714
CV %	7.0	4.0	12.0	24.3
LSD 0.05	5.7	6.4	6.8	696
LSD 0.10	4.0	4.5	4.8	489

Planted: May 31. Harvested: Sept. 20. Previous crop: small grain. Experienced uneven germination.

¹Days after planting.

²Slow darkening.

Table 10. 2023 Miscellaneous Dry Bean Variety Trial - Forest River - Authors, J. Osorno and M. Maisonneuve.

Variety	Market Class	Days to Flower	Days to Maturity	100 Seed Weight	Seed Yield
		(DAP) ¹	(DAP) ¹	(gram)	(lb/a)
Amaranto	Cranberry	47	102	45.5	390
Vero	Cranberry	41	97	40.0	319
Coyne	Great Northern	46	97	28.4	1,179
Draco	Great Northern	49	98	29.6	1,329
ND Pegasus	Great Northern	49	97	34.4	1,326
NE1-71-36	Great Northern	50	97	31.1	1,125
Panhandle Pride	Great Northern	47	93	31.1	1,204
White Pearl	Great Northern	47	97	33.5	1,065
Coral	Pink	51	100	32.6	823
Floyd	Pink	47	94	28.0	1,142
Magnolia	Pink	47	98	33.2	1,263
Merlot	Small Red	52	102	33.1	878
Ruby	Small Red	52	97	26.0	1,149
Viper	Small Red	58	102	25.8	1,176
Mean		49	98	31.4	1,108
CV %		9.6	3.7	7.1	25.6
LSD 0.05		8.0	6.1	3.8	478
LSD 0.10		5.6	4.3	2.6	334

Planted: May 31. Harvested: Sept. 20. Previous crop: small grain. Trial had uneven seed germination and plant establishment.

¹Days after planting.

Table 11. 2023 Navy Bean Variety Trial - Forest River - Authors, J. Osorno and M. Maisonneuve.

Variety	Days to Flower	Days to Maturity	100 Seed Weight	Seed Yield
	(DAP) ¹	(DAP) ¹	(gram)	(lb/a)
Armada	57	99	25.9	1,445
Au Sable	58	96	18.0	1,064
Blizzard	54	97	17.9	1,561
Charm	47	99	17.9	1,455
EX1802-N	60	97	18.3	984
EX1803-N	50	93	18.2	962
EX1804-N	51	97	17.3	1,241
EX2109-N	53	96	17.7	1,423
HMS Medalist	57	101	20.6	1,824
HMS Victory	57	97	19.6	1,465
Liberty	64	104	22.9	1,909
ND Polar	62	100	17.1	1,309
SV1893GH	60	95	18.6	1,354
T9905	60	100	19.5	1,718
Valiant	52	100	21.0	1,669
Mean	57	98	19.3	1,365
CV %	11.7	3.6	14.3	22.5
LSD 0.05	11.3	6.0	4.7	520
LSD 0.10	7.9	4.2	3.3	363

Planted: May 31. Harvested: Sept. 20. Previous crop: small grain. Trial had uneven seed germination and plant establishment.

¹Days after planting.

Table 12. 2023 Dry Bean Variety Trial - Perham, Minn. - Authors, J. Osorno and M. Maisonneuve.

Variety	Market Class	Days to Flower (DAP) ¹	Plant Height (inch)	Common Bac. Blight (1-9)	Root Rot Score (1-9)	100 Seed Weight (gram)	Seed Yield (lb/a)
Eclipse	Black	42	18	4	2	20.5	2,201
ND Twilight	Black	43	18	3	4	21.0	2,255
ND Pegasus	Great Northern	45	19	2	3	36.4	2,369
HMS Medalist	Navy	46	20	4	2	17.5	2,119
ND Polar	Navy	49	19	4	2	17.7	2,056
SV1893GH	Navy	44	19	4	2	21.1	2,083
T9905	Navy	44	19	3	2	21.7	2,243
Cowboy	Pinto	45	18	3	3	38.5	1,927
La Paz	Pinto	47	19	3	2	34.9	2,175
Monterrey	Pinto	47	19	4	3	36.0	2,377
ND Falcon	Pinto	49	21	3	3	36.3	1,653
Torreón	Pinto	45	19	4	3	35.8	2,131
USDA Basin	Pinto	46	19	3	3	35.2	2,457
Windbreaker	Pinto	43	16	4	3	37.1	2,362
ND Palomino ²	Pinto	43	17	4	2	36.7	1,902
ND Rodeo ²	Pinto	44	19	3	3	37.0	2,358
Mean		45	19	3	3	30.2	2,166
CV %		4.5	5.9	18.0	40.4	3.5	13.0
LSD 0.05		3.5	4.8	1.0	1.7	1.8	482
LSD 0.10		2.4	3.4	0.7	1.2	1.2	336

Planted: May 25. Harvested: Sept. 6. Previous crop: corn.

¹Days after planting.

²Slow darkening.

Table 13. 2023 Dry Bean Variety Trial - Staples, Minn. - Authors, J. Osorno, M. Maisonneuve and N. Boelter.

Variety	Market Class	Days to Flower (DAP) ¹	Days to Maturity (DAP) ¹	Root Rot Score (1-9)	100 Seed Weight (gram)	Seed Yield (lb/a)
Eclipse	Black	43	90	2	17.7	1,164
ND Twilight	Black	43	84	2	19.3	1,694
ND Pegasus	Great Northern	41	94	1	33.4	1,422
HMS Medalist	Navy	42	94	2	19.0	1,097
ND Polar	Navy	42	92	1	17.3	1,329
T9905	Navy	42	92	2	21.0	1,100
Cowboy	Pinto	41	92	1	38.0	1,779
La Paz	Pinto	43	94	2	33.4	1,703
Monterrey	Pinto	43	86	2	33.9	1,966
ND Falcon	Pinto	42	92	3	35.9	1,663
Torreón	Pinto	42	86	2	40.5	1,967
USDA Basin	Pinto	41	94	2	32.8	1,572
Windbreaker	Pinto	41	89	2	41.4	2,239
ND Palomino ²	Pinto	40	94	2	38.2	1,582
ND Rodeo ²	Pinto	42	94	2	36.0	1,169
Mean		42	91	2	30.5	1,563
CV %		4.9	4.1	34.6	6.4	28.9
LSD 0.05		3.5	6.3	1.1	3.3	773
LSD 0.10		2.4	4.4	0.8	2.3	538

Planted: June 12. Harvested: Sept. 15. Previous crop: corn. Trial had high disease pressure (root rots and bacterial wilt).

¹Days after planting.

²Slow darkening.

Table 14. 2023 Dry Bean Dryland Variety Trial - Carrington - Authors, M. Ostlie, K. Simons and G. Endres.

Variety	Market Class	Plant			Direct Harvest ¹	Test Weight	100 Seed Weight	Seeds/ Pound	Seed Yield	
		Maturity (DAP) ³	Height (inch)	Lodging (0-9)					2023	3-yr. Avg. ²
Ace	Black	91	19.9	0	98.3	60.7	18.0	2,518	2,401	--
B3033350	Black	88	21.1	0	97.5	61.0	16.3	2,787	2,220	--
B3036381	Black	96	22.6	1	97.8	60.5	18.4	2,473	2,585	--
Black Tails	Black	93	24.0	1	98.0	62.5	17.9	2,543	2,993	2,286
Eclipse	Black	89	22.2	0	98.5	60.6	17.3	2,642	2,651	2,166
ND Twilight	Black	93	22.4	1	95.5	61.5	18.8	2,413	2,786	2,350
Zorro	Black	92	22.0	0	97.0	61.6	17.6	2,591	2,869	--
ND Pegasus	Great Northern	93	25.4	2	96.5	59.5	32.1	1,420	3,310	2,851
Powderhorn	Great Northern	88	22.4	1	96.3	55.5	29.8	1,524	2,689	--
Armada	Navy	93	24.6	0	97.8	60.9	17.7	2,565	2,820	--
Blizzard	Navy	94	23.6	0	97.5	61.5	16.7	2,719	2,395	2,099
HMS Medalist	Navy	94	25.6	0	98.0	61.0	15.4	2,953	2,918	2,307
ND Polar	Navy	95	25.2	1	97.3	61.7	17.9	2,538	2,765	2,310
T9905	Navy	96	25.0	0	98.5	61.5	18.7	2,434	2,993	2,382
Rosetta	Pink	89	22.0	2	94.8	60.4	27.8	1,640	1,925	--
Bronco ⁴	Pinto	87	22.0	1	96.3	60.6	34.8	1,305	2,684	--
Cancun	Pinto	88	27.8	1	96.0	58.4	35.1	1,292	2,648	--
Cowboy	Pinto	87	23.6	1	95.5	59.9	32.4	1,401	3,187	2,560
La Paz	Pinto	92	24.6	3	88.8	59.6	33.0	1,376	2,330	2,360
Lariat	Pinto	91	27.4	3	93.5	58.3	32.2	1,413	2,906	2,588
Monterrey	Pinto	92	27.8	2	91.3	59.8	32.6	1,391	2,655	2,430
ND Falcon	Pinto	92	28.3	1	97.8	55.5	32.3	1,411	2,494	2,335
ND Palomino ⁴	Pinto	92	25.0	1	95.3	57.6	33.4	1,359	2,894	2,363
ND Rodeo ⁴	Pinto	92	27.8	2	90.8	60.7	30.9	1,472	2,482	--
SV6139	Pinto	86	21.3	0	94.5	59.9	28.9	1,576	2,924	--
Torreón	Pinto	89	26.2	1	95.8	59.5	34.0	1,338	2,809	2,477
USDA Diamondback ⁴	Pinto	91	26.4	1	96.0	60.3	32.6	1,394	2,700	--
USDA Rattler	Pinto	89	24.2	1	96.5	59.4	30.8	1,473	2,911	--
Vibrant ⁴	Pinto	86	24.0	1	93.8	59.3	29.6	1,532	2,689	2,295
Windbreaker	Pinto	85	20.3	2	79.3	57.8	33.1	1,372	2,356	2,122
Merlot	Small Red	92	24.0	2	90.8	59.3	33.5	1,355	2,253	2,119
Ruby	Small Red	91	22.0	8	79.3	58.8	25.5	1,780	2,380	--
Mean		90	24.0	1	93.9	59.8	27.0	1,822	2,604	2,356
CV %		2.3	8.3	--	3.5	0.7	4.4	4.9	10.0	--
LSD 0.05		2.9	2.8	--	4.5	0.6	1.6	125	365	--
LSD 0.10		2.4	2.3	--	3.8	0.5	1.4	105	306	--

Planted: May 25. Harvested: Sept. 20. Previous crop: winter rye.

¹Direct Harvest: A relative score to estimate the percent of beans that would be harvested successfully in a direct/straight harvest system.²Three-year average is for 2020, 2022 and 2023 as 2021 trial was lost due to drought.³Days after planting.⁴Slow darkening.

Table 15. 2023 Dry Bean Irrigated Variety Trial - Carrington - Authors, M. Ostlie, K. Simons and G. Endres.

Variety	Market Class	Maturity (DAP) ²	Plant Height (inch)	Direct Harvest ¹ (%)	Seeds/Pound (seeds)	Test Weight (lb/bu)	100 Seed Weight (gram)	Seed Yield	
								2023	3-yr. Avg.
Ace	Black	101	22.4	96	2,250	59.1	20.2	3,376	--
B3033350	Black	99	21.1	96	2,322	60.0	19.6	3,248	--
B3036381	Black	111	26.4	95	2,096	59.7	21.7	3,590	--
Black Tails	Black	103	24.6	96	2,176	60.9	20.8	3,271	3,091
Eclipse	Black	99	21.3	97	2,273	58.9	20.0	3,222	2,827
ND Twilight	Black	102	24.6	95	2,016	59.4	22.5	3,273	3,052
Zorro	Black	99	22.0	95	2,306	58.9	19.7	2,898	2,587
ND Pegasus	Great Northern	101	27.6	93	1,256	58.8	36.1	3,865	3,691
Powderhorn	Great Northern	93	20.9	94	1,448	53.6	31.3	2,551	--
Armada	Navy	102	24.4	98	2,257	60.5	20.1	3,678	--
Blizzard	Navy	104	23.8	93	2,331	60.5	19.5	3,033	2,962
HMS Medalist	Navy	100	27.0	96	2,571	60.5	17.7	3,698	3,240
ND Polar	Navy	104	26.0	96	2,391	60.2	19.0	3,269	3,094
T9905	Navy	104	25.0	95	2,124	60.4	21.4	3,340	3,139
Rosetta	Pink	101	24.0	84	1,342	58.5	33.8	2,100	2,106
Bronco ³	Pinto	94	20.3	96	1,112	59.8	40.8	3,111	--
Cancun	Pinto	99	28.0	95	1,018	56.1	44.6	3,393	--
Cowboy	Pinto	95	22.4	96	1,261	57.8	36.0	3,146	3,108
LA Paz	Pinto	100	26.6	90	1,237	58.0	36.7	2,986	2,880
Lariat	Pinto	99	26.4	91	1,180	57.0	38.5	3,347	3,079
Monterrey	Pinto	99	23.0	95	1,256	57.7	36.1	3,188	3,102
ND Falcon	Pinto	101	25.4	97	1,136	55.0	40.0	2,947	2,912
ND Palomino ³	Pinto	98	23.8	94	1,229	56.1	36.9	2,866	2,834
ND Rodeo ³	Pinto	102	25.8	92	1,106	59.5	41.0	3,289	3,187
SV6139	Pinto	95	25.6	94	1,365	56.8	33.3	3,377	--
Torreón	Pinto	97	26.2	95	1,189	57.1	38.2	2,924	2,936
USDA Diamondback ³	Pinto	99	26.0	94	1,213	58.5	37.4	2,958	--
USDA Rattler	Pinto	100	27.6	95	1,149	57.9	39.5	3,796	--
Vibrant ³	Pinto	94	25.8	91	1,342	57.9	33.8	2,657	2,822
Windbreaker	Pinto	93	21.7	76	1,227	54.0	37.0	2,743	2,798
Merlot	Small Red	99	24.8	76	1,219	58.3	37.2	2,259	2,477
Ruby	Small Red	98	22.0	61	1,560	57.2	29.1	2,330	--
Mean		99	24.4	91	1,595	58.2	31.0	3,054	2,949
CV %		1.6	11.0	6.0	2.7	1.2	2.5	10.3	--
LSD 0.05		2.2	3.8	7.7	61	1.0	1.1	442	--
LSD 0.10		1.8	3.2	6.4	51	0.8	0.9	370	--

Planted: May 25. Harvested: Oct. 1. Previous crop: field pea.

¹Direct Harvest: A relative score to estimate the percent of beans that would be harvested successfully in a direct/straight harvest system.²Days after planting.³Slow darkening.

Table 16. 2023 Dry Bean Irrigated Variety Trial - Oakes (CREC) - Authors, H. Eslinger and S. Eslinger.

Variety	Market Class	Maturity (DAP) ¹	Seeds/ Pound (seeds)	100 Seed Weight (gram)	Test Weight (lb/bu)	Seed Yield	
						2023	3-yr. Avg.
						-----lb/a-----	
Black Tails	Black	99	1,707	26.6	60.7	4,058	3,457
Eclipse	Black	94	1,840	24.7	61.3	3,913	3,623
ND Twilight	Black	93	1,797	25.3	63.9	4,123	3,978
Zorro	Black	94	1,861	24.5	62.3	4,244	3,506
Powderhorn	Great Northern	87	1,269	35.9	58.0	3,568	--
ND Pegasus	Great Northern	92	1,223	37.1	62.1	3,934	4,170
Rosetta	Pink	97	1,111	40.9	57.3	3,932	3,607
Merlot	Small Red	95	1,041	43.6	57.2	4,254	3,588
Ruby	Small Red	96	1,257	36.2	58.9	4,381	--
Mean		94	1,433	33.4	60.1	4,090	3,704
CV %		1.5	4.7	4.2	2.3	5.6	--
LSD 0.05		1.7	80	1.7	1.7	273	--
LSD 0.10		2.0	96	2.0	2.0	329	--

Planted: June 1. Harvested: Sept. 19, 20, 27 and 28. Previous crop: melons and squash.

¹Days after planting.

Table 17. 2023 Pinto Bean Irrigated Variety Trial - Oakes (CREC) - Authors, H. Eslinger and S. Eslinger.

Variety	Maturity (DAP) ¹	Seeds/ Pound (seeds)	100 Seed Weight (gram)	Test Weight (lb/bu)	Seed Yield	
					2023	3-yr. Avg.
					-----lb/a-----	
Cowboy	87	1,037	43.8	60.3	4,206	4,064
LaPaz	91	1,062	42.8	58.6	4,025	3,960
Lariat	91	1,024	44.4	58.1	4,024	3,706
Monterrey	91	1,077	42.2	59.1	3,980	4,004
ND Falcon	93	977	46.5	53.6	3,710	3,312
ND Palomino ²	90	1,004	45.2	55.2	4,013	4,027
ND Rodeo ²	92	956	47.5	60.5	4,399	--
Torreón	88	988	46.0	58.7	3,983	3,777
USDA Diamondback ²	92	980	46.3	59.3	4,152	--
USDA Rattler	92	1,008	45.2	58.9	4,150	--
Vibrant ²	87	1,095	41.55	59.8	3,798	3759
Windbreaker	86	1,071	42.4	58.4	4,196	4,028
Mean	90	1,015	44.9	58.4	4,044	3,848
CV %	1.7	4.1	4.0	3.7	5.2	--
LSD 0.05	1.8	49	2.2	3.0	253	--
LSD 0.10	2.1	59	2.6	3.6	303	--

Planted: June 1. Harvested: Sept. 19, 20, 27 and 28. Previous crop: melons and squash.

¹Days after planting.

²Slow darkening.

Table 18. 2023 Navy Bean Irrigated Variety Trial - Oakes (CREC) - Authors, H. Eslinger and S. Eslinger.

Variety	Maturity (DAP) ¹	Seeds/ Pound (seeds)	100 Seed Weight (gram)	Test Weight (lb/bu)	Seed Yield	
					2023	3-yr. Avg.
					----- (lb/a) -----	
Armada	93	1,684	27.0	61.3	4,250	--
Blizzard	92	1,873	24.2	64.0	4,145	3,858
HMS Medalist	93	1,960	23.2	60.3	4,038	3,798
ND Polar	93	1,932	23.6	62.1	3,891	--
T9905	93	1,636	27.7	59.6	4,328	3,895
Mean	93	1,817	25.1	61.5	4,130	3,850
CV %	0.6	4.2	4.1	2.5	3.8	--
LSD 0.05	0.7	95	1	1.9	3891	--
LSD 0.10	0.9	116	2	2.4	240	--

Planted: June 1. Harvested: Sept. 19, 20, 27 and 28. Previous crop: melons and squash.

¹Days after planting.

Table 19. 2023 Dry Bean Variety Trial - Wishek (CREC) - Authors, M. Ostlie, K. Simons, T. Indergaard and G. Endres.

Variety	Market Class	Seeds/ Pound (seeds)	100 Seed Weight (gram)	Test Weight (lb/bu)	Seed Yield	
					2023	2-yr Avg.
					----- (lb/a) -----	
Eclipse	Black	2,332	19.5	59.1	3,472	2,519
ND Twilight	Black	2,075	21.9	59.9	3,897	2,859
HMS Medalist	Navy	2,469	18.4	59.0	3,733	--
ND Polar	Navy	2,555	17.8	58.4	3,591	2,579
ND Falcon	Pinto	1,250	36.3	53.3	3,595	2,671
ND Rodeo ¹	Pinto	1,177	38.6	58.3	3,992	--
Torreon	Pinto	1,182	38.5	56.6	3,913	2,862
Vibrant ¹	Pinto	1,295	35.1	56.1	3,780	2,848
Mean		1,792	28.3	57.6	3,747	2,723
CV %		4.3	4.4	0.7	10.7	--
LSD 0.05		114	1.8	0.6	590	--
LSD 0.10		95	1.5	0.5	488	--

Planted: June 5. Harvested: Sept. 20. Previous crop: soybean.

¹Slow darkening.

Table 20. 2023 Dry Bean Variety Trial - Hettinger - Authors, J. Rickertsen and M. Wells.									
Variety	Market Class	Days to Maturity (DAP) ¹	Plant Height (inch)	Test Weight (lb/bu)	Seed Yield				
					2021	2022	2023	2-yr. Avg.	3-yr. Avg.
					------(lb/a)-----				
Black Tails	Black	100	25	53.2	730	946	1,826	1,386	1,167
Eclipse	Black	97	24	52.8	457	983	2,007	1,495	1,149
ND Twilight	Black	99	20	53.6	663	1,018	1,956	1,487	1,212
Zorro	Black	99	24	49.3	753	768	1,841	1,304	1,120
ND Pegasus	Great Northern	100	26	49.1	740	1,404	2,049	1,726	1,397
Powderhorn	Great Northern	95	19	47.0	--	--	1,778	--	--
Armada	Navy	100	23	55.6	--	915	1,760	1,337	--
Blizzard	Navy	100	23	57.2	448	894	1,583	1,239	975
HMS Medalist	Navy	101	23	55.9	474	868	1,819	1,343	1,054
ND Polar	Navy	101	27	58.7	709	964	1,925	1,444	1,199
T9905	Navy	102	22	56.6	580	1,078	1,720	1,399	1,126
Rosetta	Pink	98	24	48.6	738	736	1,599	1,167	1,024
Cowboy	Pinto	95	22	52.5	586	1,230	1,788	1,509	1,201
LaPaz	Pinto	98	23	56.4	819	965	2,044	1,504	1,276
Lariat	Pinto	98	20	53.9	690	1,177	1,765	1,471	1,211
Monterrey	Pinto	97	24	56.1	809	1,129	2,183	1,656	1,374
ND Falcon	Pinto	99	23	54.4	746	1,115	1,979	1,547	1,280
ND Palomino ²	Pinto	99	22	50.6	801	1,072	1,579	1,325	1,151
ND Rodeo ²	Pinto	100	22	54.4	793	1,160	1,839	1,500	1,264
Torreon	Pinto	95	22	52.8	895	1,250	1,709	1,480	1,285
USDA Diamondback ²	Pinto	99	24	55.5	--	--	1,922	--	--
USDA Rattler	Pinto	97	27	55.1	--	--	2,016	--	--
Vibrant ²	Pinto	94	25	54.1	569	908	2,045	1,476	1,174
Windbreaker	Pinto	94	19	51.6	640	560	1,652	1,106	951
Merlot	Small Red	99	22	48.5	654	782	1,292	1,037	909
Ruby	Small Red	98	20	48.9	--	--	1,489	--	--
Mean		98	23	52.9	709	1,016	1,804	1,401	1,165
C.V. %		--	10.2	4.9	18.7	12.8	16.4	--	--
LSD 0.05		--	2.7	3.1	187	178	348	--	--
LSD 0.10		--	2.1	2.4	156	138	270	--	--

Planted: May 23. Harvested: Sept.19. Previous crop:winter wheat.

¹Days after planting.

²Slow darkening.

Table 21. 2023 Dry Bean Variety Trial - Langdon - Authors, B. Hanson, L. Henry and R. Duerr.

Variety	Market Class	Days to Maturity (DAP) ¹	Plant Height (inch)	100 Seed Weight (gram)	Seed Yield				
					2021	2022	2023	2-yr. Avg.	3-yr. Avg.
Black Tails	Black	103	22	19.8	2,063	3,463	3,512	3,487	3,013
Eclipse	Black	101	20	19.0	2,049	3,132	2,935	3,033	2,705
ND Twilight	Black	101	16	20.2	1,522	2,901	2,458	2,680	2,294
Zorro	Black	102	19	20.3	1,899	2,421	3,209	2,815	2,510
ND Pegasus	Great Northern	103	18	37.8	2,320	4,098	3,176	3,637	3,198
Powderhorn	Great Northern	99	17	34.6	--	--	3,078	--	--
Armada	Navy	103	20	20.1	--	3,194	3,064	3,129	--
Blizzard	Navy	103	22	19.6	1,962	3,350	3,210	3,280	2,841
HMS Medalist	Navy	103	20	17.9	2,197	2,847	3,238	3,043	2,761
ND Polar	Navy	103	21	19.2	--	3,172	2,994	3,083	--
T9905	Navy	104	18	21.2	1,835	3,326	3,118	3,222	2,760
Rosetta	Pink	104	19	31.6	2,044	2,580	3,128	2,854	2,584
Cowboy	Pinto	98	18	34.5	1,638	3,074	3,246	3,160	2,653
La Paz	Pinto	101	21	33.1	1,827	3,155	3,496	3,326	2,826
Lariat	Pinto	102	21	36.6	1,714	3,026	3,416	3,221	2,719
Monterrey	Pinto	99	20	34.3	2,105	3,189	3,254	3,222	2,849
ND Falcon	Pinto	103	21	33.9	1,695	3,278	2,684	2,981	2,552
ND Palomino ²	Pinto	103	19	38.0	1,585	2,632	2,557	2,594	2,258
ND Rodeo ²	Pinto	104	21	37.5	--	--	2,868	--	--
Torreón	Pinto	98	19	29.8	2,165	3,558	2,767	3,163	2,830
USDA Diamondback ²	Pinto	103	21	38.2	--	--	3,050	--	--
USDA Rattler	Pinto	102	20	36.5	--	--	3,546	--	--
Vibrant ²	Pinto	99	20	32.9	2,114	3,626	3,227	3,426	2,989
Windbreaker	Pinto	99	16	34.4	1,587	2,490	3,109	2,799	2,395
Merlot	Small Red	102	19	35.8	2,036	2,875	2,493	2,684	2,468
Ruby	Small Red	102	17	32.8	--	--	2,799	--	--
Mean		102	19	29.8	1,937	3,160	3,054	3,088	2,695
CV %		1.5	7.5	7.0	9.5	8.9	7.0	--	--
LSD 0.05		2.6	2.4	3.4	235	463	480	--	--
LSD 0.10		2.1	2.0	2.8	197	336	--	--	--

Planted: May 30. Harvested: Oct. 12. Previous crop: soybean.

¹Days after planting.²Slow darkening.

Table 22. Pinto Bean Variety Source.

PINTO	
USDA-Basin	USDA-ARS
Bronco ¹	Treasure Valley Seed
Cancun	ProVita
Centennial	Colorado State Univ.
Charro	Michigan State Univ.
Cowboy	ProVita
Croissant	Colorado State Univ.
EX1844-P	Treasure Valley Seed
EX1845-P	Treasure Valley Seed
EX2141-P	Treasure Valley Seed
EX2143-P	Treasure Valley Seed
EX2145-P	Treasure Valley Seed
EX2146-P	Treasure Valley Seed
EX2149-P	Treasure Valley Seed
USDA Diamondback ¹	USDA-ARS
Gleam ¹	ProVita
La Paz	ProVita
Lariat	NDSU
Monterrey	ProVita
Mystic ¹	ProVita
NE2-17-37	Univ. of Nebraska
NE4-17-10	Univ. of Nebraska
NE4-17-6	Univ. of Nebraska
ND Falcon	NDSU
ND Palomino ¹	NDSU
ND Rodeo ¹	NDSU
Radiant ¹	ProVita
USDA Rattler	USDA-ARS
Rustler	ProVita
Santa Maria	ProVita
Staybright ¹	Colorado State Univ.
SV6139GR	Bayer/Seminis
Torreón	ProVita
Vibrant ¹	ProVita
Wildcat ¹	Univ. of Nebraska
Windbreaker	Bayer/Seminis

¹Slow darkening.**Table 23. Black, Navy, Great Northern, Pink, Small Red and Cranberry Bean Variety Source.**

BLACK	
Ace	ADM
B3033350	ADM
B3036381	ADM
Blackbeard	ProVita
Black Tails	ProVita
Eclipse	NDSU
ND Twilight	NDSU
Nimbus	ProVita
Spectre	ProVita
Zorro	Michigan State Univ.
NAVY	
Armada	ProVita
Au Sable	Michigan State Univ.
Blizzard	ProVita
Charm	Treasure Valley Seed
EX1802-N	Treasure Valley Seed
EX1803-N	Treasure Valley Seed
EX1804-N	Treasure Valley Seed
EX2109-N	Treasure Valley Seed
HMS Medalist	AmeriSeed/ADM
HMS Victory	AmeriSeed/ADM
Liberty	ProVita
ND Polar	NDSU
SV1893GH	Bayer/Seminis
T9905	Hyland
Valiant	ProVita
GREAT NORTHERN	
Andromeda	ProVita
Coyne	Univ. of Nebraska
Draco	ProVita
Lyra	ProVita
NE1-71-36	Univ. of Nebraska
ND Pegasus	NDSU
Panhandle Pride	Univ. of Nebraska
Powderhorn	Michigan State Univ.
Virgo	ProVita
White Pearl	Univ. of Nebraska
PINK	
Coral	Michigan State Univ.
Floyd	ADM/Syngenta
Magnolia	ProVita
Rosetta	Michigan State Univ.
SMALL RED	
Merlot	Michigan State Univ.
Ruby	ProVita
Viper	ProVita
CRANBERRY	
Amaranto	Bayer/Seminis
Vero	ADM

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