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North Dakota Dry Bean

Variety Trial Results for 2019 and Selection Guide

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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 17 years is shown in Table 1, with production by classes in Table 2.

Dry edible bean production for 2019 is estimated at 1,660 pounds per acre, down 100 pounds from last year.

Table 1. North Dakota Dry Edible Bean Harvested Acreage, 2003 to 2019.

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	585,000
2017	685,000
2018	615,000
2019	600,000 ¹

Source: North Dakota Agricultural Statistics Service – USDA.

¹Forecasted.

Table 2. North Dakota Dry Edible Bean Production by Commercial Class, 2003 to 2018.

Year	Pinto (Cwt)	Navy (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	4,779,000	1,302,000
2014	5,677,000	1,622,000
2015	4,932,000	1,694,000
2016	5,745,000	1,321,000
2017	8,409,000	1,648,000
2018	5,352,000	1,620,000

Source: North Dakota Agricultural Statistics Service – USDA.

2019 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% 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 express our thanks to dry bean growers who assisted with the on-farm variety testing.

We acknowledge the support for Juan Osorno’s breeding project, and conducting the statewide dry bean variety trials, compilation and printing of data for the annual dry bean publication from the Northharvest Bean Growers Association. Research specialists and technicians helped with the field work and data compilation. The assistance given by many secretaries in entering data in respective portions of the document is very much appreciated. A special thank you goes to Lisa Johnson, Extension Plant Sciences secretary, for assisting in the compilation of this publication.

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.

Variety	Market Class	Days to Flower (DAP) ¹	Plant Height (inch)	100 Seed Weight (gram)	Seed Yield (lb/a)
AAC Scotty	Cranberry	45	15	56.9	1,293
Etna	Cranberry	43	13	56.4	1,262
Vero	Cranberry	43	13	55.7	1,771
Chaparral	Dark Red Kidney	45	16	45.8	2,172
Dynasty	Dark Red Kidney	43	17	57.5	2,074
Epic	Dark Red Kidney	45	19	54.7	2,062
Montcalm	Dark Red Kidney	43	18	49.7	1,668
Rampart	Dark Red Kidney	44	18	48.5	2,261
Red Cedar	Dark Red Kidney	44	17	49.7	2,037
Red Hawk	Dark Red Kidney	44	16	49.5	1,462
Red Rover	Dark Red Kidney	43	16	53.6	2,157
Spire	Dark Red Kidney	46	16	52.3	2,277
Talon	Dark Red Kidney	43	15	50.2	1,736
Big Red	Light Red Kidney	43	13	52.1	1,101
CELRK	Light Red Kidney	43	13	55.9	1,549
Clouseau	Light Red Kidney	43	15	56.1	1,667
Coho	Light Red Kidney	44	18	46.8	2,223
Foxfire	Light Red Kidney	43	16	54.1	1,670
OAC Inferno	Light Red Kidney	45	19	59.7	2,405
Pink Panther	Light Red Kidney	43	15	59.8	1,808
Red Dawn	Light Red Kidney	43	12	59.1	1,488
Ronnie's Red	Light Red Kidney	47	20	62.5	2,510
Rosie	Light Red Kidney	43	17	51.2	2,049
Beluga	White Kidney	44	17	51.4	1,999
ND Whitetail	White Kidney	44	17	49.8	2,209
Mean		44	16	54	1876
CV %		3.2	10.7	4.0	15.1
LSD 0.05		2	2.4	3.0	400
LSD 0.10		2	2.0	2.5	340

Planted: June 1. Harvested: Sept 24. Previous crop: corn.

¹Days after planting.

Table 4. 2019 Miscellaneous Dry Bean Variety Trial - Park Rapids, Minn. - Authors, J. Osorno, J. VanderWal and J. Posch.

Variety	Market Class	Days to Flower	Plant Height	100 Seed Weight	Seed Yield
		(DAP) ¹	(inch)	(gram)	(lb/a)
Eclipse	Black	50	24	19.8	2,094
AAC Knight Rider	Black	49	20	18.9	1,741
AAC Argosy	Navy	48	21	23.7	2,119
AAC Shock	Navy	47	20	23.4	2,371
AC Portage	Navy	48	17	18.3	787
HMS Medalist	Navy	50	22	17.1	2,142
Nautica	Navy	53	21	18.5	1,787
T9905	Navy	53	21	20.7	1,626
La Paz	Pinto	50	20	36.3	1,964
Lariat	Pinto	49	19	41.7	2,033
Monterrey	Pinto	51	21	33.0	2,010
ND Falcon	Pinto	54	26	36.5	1,589
ND Palomino	Pinto	48	19	41.4	1,815
Stampede	Pinto	48	19	42.0	1,600
Vibrant	Pinto	50	22	37.6	1,735
Windbreaker	Pinto	48	17	42.3	1,917
Mean		50	21	29.4	1,833
CV %		3.4	8.4	6.1	15.5
LSD 0.05		2.4	2.5	2.6	400
LSD 0.10		2.0	2.0	2.1	340

Planted: June 1. Harvested: Sept. 24. Previous crop: corn.

¹Days after planting.**Table 5. 2019 Cranberry and Kidney Bean Variety Trial - Perham, Minn. - Authors, J. Osorno, J. VanderWal and J. Posch.**

Variety	Market Class	Days to Flower	Plant Height	100 Seed Weight	Seed Yield
		(DAP) ¹	(inch)	(gram)	(lb/a)
AAC Scotty	Cranberry	46	18	53.1	1,878
Vero	Cranberry	44	15	52.2	1,567
Chaparral	Dark Red Kidney	47	18	41.9	2,097
Dynasty	Dark Red Kidney	44	19	55.2	2,351
Epic	Dark Red Kidney	46	21	53.1	2,103
Montcalm	Dark Red Kidney	44	20	49.5	1,976
Rampart	Dark Red Kidney	47	22	45.3	2,152
Red Hawk	Dark Red Kidney	44	18	47.8	1,998
Red Rover	Dark Red Kidney	43	18	49.1	1,796
Spire	Dark Red Kidney	46	19	47.5	2,128
Talon	Dark Red Kidney	46	20	50.8	2,228
Big Red	Light Red Kidney	42	17	51.8	2,049
Clouseau	Light Red Kidney	42	19	56.0	2,013
Foxfire	Light Red Kidney	43	18	50.3	1,578
Inferno	Light Red Kidney	46	22	57.3	1,663
Pink Panther	Light Red Kidney	42	16	52.9	1,514
Red Dawn	Light Red Kidney	42	14	54.1	1,596
Ronnie's Red	Light Red Kidney	46	22	56.2	1,645
Rosie	Light Red Kidney	44	20	49.2	2,093
Beluga	White Kidney	46	21	49.5	1,785
ND Whitetail	White Kidney	45	20	50.2	2,142
Mean		44	19	51.1	1,922
CV %		4.7	9.7	4.7	16.9
LSD 0.05		2.9	2.6	3.3	440
LSD 0.10		2.4	2.2	2.8	370

Planted: May 30. Harvested: Sept. 25. Previous crop: potato.

¹Days after planting.

Table 6. 2019 Miscellaneous Dry Bean Variety Trial - Perham, Minn. - Authors, J. Osorno, J. VanderWal and J. Posch.

Variety	Market Class	Days to Flower (DAP) ¹	Plant Height (inch)	100 Seed Weight (gram)	Seed Yield (lb/a)
AAC Knight Rider	Black	50	19	17.4	1,297
Eclipse	Black	52	20	20.3	947
AAC Argosy	Navy	50	20	21.5	2,104
AAC Shock	Navy	48	20	22.0	1,680
AC Portage	Navy	47	18	19.5	1,409
Medalist	Navy	52	23	16.4	1,102
Nautica	Navy	51	22	16.4	1,258
T9905	Navy	51	21	20.8	1,189
La Paz	Pinto	50	19	29.5	1,566
Lariat	Pinto	49	18	32.4	737
Monterrey	Pinto	51	18	31.1	1,310
ND Falcon	Pinto	51	21	33.7	863
ND Palomino	Pinto	50	19	36.9	1,763
Stampede	Pinto	49	19	28.8	1,288
Vibrant	Pinto	50	20	34.6	1,259
Windbreaker	Pinto	50	19	36.8	1,447
Mean		50	20	26.1	1,326
CV %		2.4	11.6	9.7	27.4
LSD 0.05		1.7	3.3	3.6	520
LSD 0.10		1.4	2.7	3.0	430

Planted: May 30. Harvested: Sept 25. Previous crop: potato.

¹Days after planting.

Table 7. 2019 Dry Bean Variety Trial - Dryland - Carrington - Authors, M. Ostlie, B. Schatz and G. Endres.

Variety	Market	Maturity (DAP) ³	Growth	Direct	Seeds/ Pound	100 Seed	Seed Yield	
	Class		Habit ¹	Harvest ²		Weight	2019	3-yr. Avg.
			(1-9)	(%)		(gram)	----- (lb/a) -----	
Black Tails	Black	85	7.3	97	2,311	19.7	2,417	--
Eclipse	Black	88	8.0	98	2,352	19.3	2,437	2,148
Loreto	Black	91	6.3	95	2,362	19.3	2,271	2,041
Zorro	Black	89	7.0	95	2,437	18.6	2,478	2,048
ND Pegasus	Great Northern	91	5.3	91	1,247	36.4	2,528	--
Powderhorn	Great Northern	89	6.8	93	1,264	35.9	2,443	2,345
Blizzard	Navy	91	8.0	97	2,344	19.4	2,313	--
HMS Medalist	Navy	91	7.0	96	2,467	18.4	2,153	2,080
T9905	Navy	91	7.0	95	2,161	21.0	2,454	2,251
Rosetta	Pink	86	6.5	93	1,438	31.6	2,546	2,191
Bill Z	Pinto	92	2.0	41	1,301	34.9	2,659	--
Centennial	Pinto	89	5.0	90	1,233	36.9	2,614	--
Cowboy	Pinto	87	7.5	92	1,217	37.4	2,640	--
Croissant	Pinto	89	3.0	71	1,269	35.8	2,694	--
DR Wood	Pinto	91	4.3	88	1,209	37.6	2,592	--
La Paz	Pinto	89	6.3	94	1,262	36.0	2,693	2,524
Lariat	Pinto	89	4.0	88	1,285	35.3	2,472	2,247
Long's Peak	Pinto	89	4.5	85	1,212	37.5	2,457	--
Monterrey	Pinto	89	6.8	94	1,279	35.6	2,480	2,440
Montrose	Pinto	89	2.0	44	1,229	37.3	2,600	--
ND Falcon	Pinto	93	6.3	95	1,171	38.8	2,662	--
ND Palomino	Pinto	91	5.0	89	1,297	35.1	2,487	2,289
Radiant	Pinto	87	5.8	91	1,393	32.6	2,212	--
Stampede	Pinto	87	6.3	89	1,336	34.0	2,587	2,425
StayBright	Pinto	93	3.3	86	1,366	33.8	2,533	--
Torreón	Pinto	88	6.5	95	1,220	37.3	2,558	--
Vibrant	Pinto	87	6.0	90	1,356	33.5	2,438	--
Windbreaker	Pinto	86	4.3	82	1,230	36.9	2,860	2,524
Merlot	Small Red	89	4.8	86	1,252	36.4	2,269	1,971
Viper	Small Red	89	6.5	96	1,598	28.7	2,469	--
Mean		89	5.6	88	1,537	31.7	2,501	2,252
CV %		1.6	12.7	4.3	5.3	5.6	11.3	--
LSD 0.05		2.1	1.0	5.3	114.0	2.5	NS	--
LSD 0.10		1.7	0.8	4.4	96.0	2.1	NS	--

Planted: May 29. Harvested: Sept. 6 and 17. Previous crop: durum.

¹Growth 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.

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

³Days after planting.

Table 8. 2019 Dry Bean Variety Trial - Irrigated - Carrington - Authors, M. Ostlie, B. Schatz and G. Endres.

Variety	Market Class	Maturity (DAP) ³	Growth Habit ¹	Direct Harvest ²	Seeds/ Pound	100 Seed Weight (gram)	Seed Yield	
							2019	3-yr. Avg.
Black Tails	Black	93	5.0	72.5	2,251	20.2	3,670	--
Eclipse	Black	94	6.8	72.5	2,180	20.8	3,395	3,256
Loreto	Black	94	5.0	72.5	2,360	19.3	3,146	3,189
Zorro	Black	94	7.0	85.0	2,250	20.2	3,025	3,062
ND Pegasus	Great Northern	99	2.5	60.0	1,221	37.2	4,169	--
Powderhorn	Great Northern	94	3.3	63.8	1,259	36.1	3,240	3,406
Blizzard	Navy	99	4.8	76.3	2,342	19.4	3,723	--
HMS Medalist	Navy	98	5.0	66.3	2,511	18.1	3,617	3,596
T9905	Navy	98	4.0	55.0	2,029	22.4	3,868	3,683
Rosetta	Pink	95	4.3	62.5	1,310	34.7	3,303	3,610
Bill Z	Pinto	96	1.0	26.3	1,353	33.7	2,517	--
Centennial	Pinto	96	4.0	61.3	1,204	37.7	3,372	--
Cowboy	Pinto	95	4.3	67.5	1,160	39.2	3,518	--
Croissant	Pinto	97	2.3	50.0	1,247	36.5	3,104	--
DR Wood	Pinto	99	3.8	58.8	1,191	38.1	3,265	--
La Paz	Pinto	94	4.5	66.3	1,297	35.2	3,748	3,733
Lariat	Pinto	95	3.3	48.8	1,197	38.1	3,327	3,378
Long's Peak	Pinto	96	3.3	58.8	1,146	39.6	2,836	--
Monterrey	Pinto	95	4.5	68.8	1,322	34.4	3,417	3,669
Montrose	Pinto	93	1.0	20.0	1,254	36.2	2,734	--
ND Falcon	Pinto	100	3.0	63.8	1,185	38.5	2,964	--
ND Palomino	Pinto	96	3.5	62.5	1,169	38.9	3,976	3,578
Radiant	Pinto	94	5.3	70.0	1,204	37.7	4,334	--
Stampede	Pinto	93	2.8	57.5	1,341	34.1	2,488	3,149
Torreon	Pinto	95	4.5	72.5	1,177	38.6	3,621	--
Vibrant	Pinto	94	4.5	73.8	1,195	38.0	3,309	--
Windbreaker	Pinto	94	2.5	32.5	1,188	38.3	3,723	3,537
Merlot	Small Red	96	2.0	37.5	1,242	36.6	3,229	3,180
Viper	Small Red	96	3.3	62.5	1,726	26.4	3,248	--
Mean		95	3.8	60.2	1,500	32.6	3,375	3,430
CV %		0.9	29.5	12.4	4.7	4.4	17.3	--
LSD 0.05		1	1.5	10.5	100	2.0	829	--
LSD 0.10		1	1.3	8.8	83	1.7	693	--

Planted: May 29. Harvested: Sept. 19. Previous crop: soybean.

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

Table 9. 2019 Pinto Bean Variety Trial - Irrigated - Williston - Authors, J. Jacobs and T. Tjelde.

Variety	Days to Maturity (DAP) ²	Canopy Height (inch)	Plant Lodge ¹ (0-9)	Seeds/ Pound (seeds)	Test Weight (lb/bu)	100 Seed Weight (gram)	Seed Yield		
							2019	2-yr. Avg.	3-yr. Avg.
La Paz	120	13	0	1,235	59.6	37.0	1,563	2,018	--
Monterrey	125	15	1	1,235	59.3	37.0	1,510	2,096	3,027
ND Falcon	123	12	0	1,259	56.2	36.0	1,705	2,114	2,810
ND Palomino	124	13	0	1,308	57.5	35.0	1,207	--	--
Stampede	122	13	0	1,285	57.1	35.0	1,510	--	--
Torreón	124	14	0	1,211	58.3	38.0	1,529	1,705	2,162
Vibrant	124	13	0	1,462	61.3	31.0	1,431	1,721	2,326
Windbreaker	124	13	0	1,224	55.0	37.0	1,245	--	--
Mean	123	13	0.2	1,277	58.1	35.7	1,462	1,931	2,581
C.V. %	2	16.4	566	2.9	1.3	2.9	13.3	--	--
LSD 0.05	3	NS	NS	54.8	1.1	1.5	288	--	--
LSD 0.10	3	3.1	1.1	45.2	0.9	1.3	238	--	--

Table 10. 2019 Navy Bean Variety Trial - Irrigated - Williston - Authors, J. Jacobs and T. Tjelde.

Variety	Days to Maturity (DAP) ²	Canopy Height (inch)	Plant Lodge ¹ (0-9)	Seeds/ Pound (seeds)	Test Weight (lb/bu)	100 Seed Weight (gram)	Seed Yield	
							2019	2-yr. Avg.
Blizzard	122	12	0	580	62.4	78.4	1,047	1,047
HMS Medalist	122	13	0	589	63.9	77.4	1,241	1,249
T9905	124	11	0	580	61.9	78.5	1,117	1,225
Mean	122	12	0	583	62.7	78.1	1,135	1,174
C.V. %	1.5	13.3	--	5.6	1.3	5.6	17.4	--
LSD 0.05	NS	NS	--	NS	1.4	NS	NS	--
LSD 0.10	NS	NS	--	NS	1.1	NS	NS	--

Table 11. 2019 Miscellaneous Dry Bean Variety Trial - Irrigated - Williston - Authors, J. Jacobs and T. Tjelde.

Variety	Market Class	Days to Maturity (DAP) ²	Canopy Height (inch)	Plant Lodge ¹ (0-9)	Seeds/ Pound (seeds)	Test Weight (lb/bu)	100 Seed Weight (gram)	Seed Yield	
								2019	2-yr. Avg.
Black Tails	Black	121	12	0	535	61.6	93.7	1,732	--
Eclipse	Black	123	12	0	587	59.6	77.3	1,587	1,692
Loreto	Black	120	10	0	555	60.8	86.0	1,204	1,459
Zorro	Black	125	13	0	636	59.9	71.5	1,161	1,928
ND Pegasus	Great Northern	122	11	0	382	55.7	123.2	1,983	--
Powderhorn	Great Northern	121	12	0	334	56.8	136.2	1,519	1,556
Rosetta	Pink	121	13	0	405	60.4	119.5	1,375	1,402
Merlot	Small Red	121	13	0	351	58.9	129.7	1,573	--
Viper	Small Red	125	13	0	474	59.6	97.1	1,735	--
Mean		122	12	0	473	59.3	103.8	1,541	1,607
C.V. %		1.6	21.6	--	19.7	3.3	20.5	21.0	--
LSD 0.05		2.8	NS	--	135	2.8	30.5	452	--
LSD 0.10		2.3	NS	--	112	2.3	25.4	376	--

Planted: May 21. Harvested: Oct. 7. Previous crop: corn.

¹0 = no lodging, 9 = lying flat on ground.²Days after planting.

Table 12. 2019 Dry Bean Variety Trial - Irrigated - Oakes (Carrington REC) - Authors, K. Cooper, H. Eslinger and S. Nelson.

Variety	Market Class	Maturity (DAP) ¹	Seeds/Pound (seeds)	100 Seed Weight (gram)	Test Weight (lb/bu)	Seed Yield	
						2019	3-yr. Avg.
						------(lb/a)-----	
Black Tails	Black	83	2,372	19.1	63.0	3,612	--
Eclipse	Black	86	2,148	21.2	63.1	4,221	3,574
Loreto	Black	93	2,342	19.4	63.6	3,630	3,462
Zorro	Black	88	2,055	22.1	63.2	4,292	4,342
ND Pegasus	Great Northern	87	1,210	37.6	62.7	4,118	--
Powderhorn	Great Northern	83	1,436	31.9	57.3	3,174	2,995
Rosetta	Pink	83	1,448	31.4	60.3	4,386	3,622
Merlot	Small Red	93	1,209	37.5	60.0	4,895	3,624
Viper	Small Red	93	1,650	27.5	61.5	3,530	--
Mean		88	1,763	27.5	61.6	3,984	3,603
CV %		1.4	4.0	5.1	0.7	19.5	--
LSD 0.05		1.7	100	2.1	0.6	1151	--
LSD 0.10		1.4	80	1.7	0.5	957	--
Blizzard	Navy	91	2,303	19.7	64.5	2,797	--
HMS Medalist	Navy	93	2,498	18.2	64.7	2,393	2,779
T9905	Navy	94	1,948	23.3	64.7	2,974	3,029
Mean		93	2,249	20.4	64.7	2,721	2,904
CV %		2.0	4.5	4.3	0.5	7.1	--
LSD 0.05		3.2	174	1.5	0.5	287	--
LSD 0.10		2.6	138	1.2	0.4	228	--
La Paz	Pinto	85	1,129	40.2	61.1	3,734	3,709
Lariat	Pinto	86	1,097	41.4	60.2	3,333	3,510
Monterrey	Pinto	85	1,212	37.5	60.8	3,539	3,525
ND Falcon	Pinto	90	1,087	42.0	59.4	3,211	--
ND Palomino	Pinto	90	1,153	39.4	59.9	3,011	3,264
Stampede	Pinto	85	1,174	38.7	59.0	2,747	2,709
Torrean	Pinto	84	1,158	39.2	60.5	3,106	--
Vibrant	Pinto	85	1,118	40.7	62.1	3,118	--
Windbreaker	Pinto	84	1,025	44.4	58.2	3,563	3,331
Mean		86	1,128	40.4	60.1	3,262	3,341
CV %		2.3	4.8	4.8	0.9	9.2	--
LSD 0.05		2.9	79	2.8	0.7	430	--
LSD 0.10		2.4	65	2.3	0.6	357	--

Planted: June 4. Harvested: Sept. 17-18. Previous crop: soybean.

¹Days after planting.

Table 13. 2019 Dry Bean Variety Trial - Langdon - Authors, B. Hanson, T. Hakanson and L. Henry.

Variety	Market Class	100 Seed Weight (gram)	Seed Yield				
			2017	2018	2019	2-yr. Avg.	3-yr. Avg.
Black Tails	Black	18.2	--	--	2,112	--	--
Eclipse	Black	18.7	3,858	2,679	2,181	2,430	2,906
Loreto	Black	18.1	2,391	2,722	2,171	2,447	2,428
Zorro	Black	17.2	2,738	3,046	2,376	2,711	2,720
ND Pegasus	Great Northern	31.9	--	--	2,811	--	--
Powderhorn	Great Northern	30.5	3,327	3,227	2,276	2,751	2,943
Blizzard	Navy	16.9	--	--	2,327	--	--
HMS Medalist	Navy	17.6	3,118	2,567	2,346	2,456	2,677
T9905	Navy	21.2	3,948	2,781	2,065	2,423	2,931
Rosetta	Pink	26.1	3,490	2,875	2,389	2,632	2,918
La Paz	Pinto	35.6	3,730	2,741	2,564	2,653	3,012
Lariat	Pinto	35.3	3,874	2,861	2,516	2,689	3,084
Monterrey	Pinto	34.9	3,902	3,068	2,442	2,755	3,137
ND Falcon	Pinto	34.7	--	--	2,280	--	--
ND Palomino	Pinto	33.8	3,138	2,864	2,239	2,551	2,747
Stampede	Pinto	31.6	3,144	3,202	2,415	2,808	2,920
Torreón	Pinto	33.8	--	--	2,553	--	--
Vibrant	Pinto	34.4	--	--	2,693	--	--
Windbreaker	Pinto	37.7	3,458	2,552	2,291	2,421	2,767
Merlot	Small Red	32.8	2,353	2,284	2,205	2,244	2,281
Viper	Small Red	25.6	--	--	2,854	--	--
Mean		27.9	3,319	2,819	2,386	2,569	2,819
CV %		5.2	8.2	8.2	10.8	7.0	11.4
LSD 0.05		2.5	445	385	427	387	541
LSD 0.10		1.9	370	319	355	318	449

Planted: May 20. Harvested: Oct. 9.

Table 14. 2019 Dry Bean Variety Trial - Hettinger - Author, J. Rickertsen and M. Wells.

Variety	Type	Plant Height (inch)	Plant Lodge ¹ (0-9)	Test Weight (lb/bu)	Seed Yield (lb/a)		
					2019	2-yr. Avg.	3-yr. Avg.
Black Tails	Black	23	5	57.0	1,870	--	--
Eclipse	Black	24	3	57.3	1,661	1,412	1,425
Loreto	Black	22	4	55.9	1,618	1,312	1,307
Zorro	Black	23	3	56.2	1,570	1,321	1,344
ND Pegasus	Great Northern	31	3	52.2	1,811	--	--
Powderhorn	Great Northern	30	4	48.8	1,497	1,400	1,567
Blizzard	Navy	27	4	56.5	1,166	--	--
HMS Medalist	Navy	24	3	56.9	1,130	1,034	1,178
T9905	Navy	27	4	56.6	1,350	1,297	1,415
Rosetta	Pink	28	4	53.5	1,519	1,290	1,392
La Paz	Pinto	30	6	52.2	1,441	1,566	1,546
Lariat	Pinto	29	8	51.3	1,245	1,310	1,253
Monterrey	Pinto	31	5	51.9	1,345	1,499	1,498
ND Falcon	Pinto	28	6	49.5	1,509	--	--
ND Palomino	Pinto	31	6	51.5	1,611	1,574	1,476
Stampede	Pinto	27	6	50.4	1,797	1,703	1,607
Torreon	Pinto	28	6	50.8	1,437	--	--
Vibrant	Pinto	29	5	52.5	1,286	--	--
Windbreaker	Pinto	30	6	52.2	1,295	1,415	1,313
Merlot	Small Red	26	5	50.7	1,757	1,384	1,406
Viper	Small Red	25	5	54.2	1,659	--	--
Mean		27	5	53.2	1,504	1,394	1,409
C.V. %		13.1	14.6	1.8	15.7	17.2	16.3
LSD 0.05		5.0	1.0	1.4	330	519	385
LSD 0.10		4.2	0.8	1.2	275	425	320

Planted: May 30. Harvested: Oct. 8. Previous crop: durum.

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

Table 15. 2019 Dry Bean Variety Trial - Minot - Authors, E. Eriksmoen, J. Effertz and A. Kraklau.

Variety	Market Class	Maturity (DAP) ¹	Plant Height (inch)	100 Seed Weight (grams)	Seed Yield		
					2019	2-yr. Avg.	3-yr. Avg.
					------(lb/a)-----		
Black Tails	Black	98	14	16.8	1,672	--	--
Eclipse	Black	99	13	18.3	1,685	1,199	1,636
Loreto	Black	101	15	17.7	1,081	883	1,251
Zorro	Black	100	12	18.1	1,485	1,329	1,468
ND Pegasus	Great Northern	98	16	32.0	2,113	--	--
Powderhorn	Great Northern	87	14	30.0	1,841	1,586	1,574
Blizzard	Navy	94	11	16.3	1,544	--	--
HMS Medalist	Navy	101	15	16.7	1,544	1,221	1,284
T9905	Navy	101	14	18.9	1,424	1,194	1,504
Rosetta	Pink	101	14	28.6	1,365	1,132	1,710
La Paz	Pinto	93	14	33.0	1,619	1,559	1,565
Lariat	Pinto	93	15	32.4	2,007	1,865	1,976
Monterrey	Pinto	92	13	31.5	1,534	1,345	1,598
ND Falcon	Pinto	98	14	30.0	1,443	--	--
ND Palomino	Pinto	93	14	32.1	1,499	1,589	1,757
Stampede	Pinto	90	14	29.9	1,603	1,290	1,369
Torreon	Pinto	91	14	32.8	1,916	--	--
Vibrant	Pinto	91	15	28.7	1,544	--	--
Windbreaker	Pinto	89	14	33.3	1,243	1,153	1,288
Merlot	Small Red	98	16	32.7	1,399	1,143	1,248
Viper	Small Red	99	14	24.8	2,043	--	--
Mean		96	14	27.0	1,599	1,320	1,516
C.V. %		1	8.3	3.8	11.6	--	--
LSD 0.05		2.0	2.0	2.0	304	--	--
LSD 0.10		1.0	2.0	1.0	253	--	--

Planted: May 20. Harvested: Sept. 17. Previous crop: spring wheat.

¹Days after planting.

Table 16. Pinto Bean Variety Descriptions.

Class and Cultivar	Origin	RM¹	Plant Type²
<u>PINTO</u>			
Bill Z	Colorado State Univ.	ML	UV
Centennial	Colorado State Univ.	ML	UV
Cowboy	Provita	ML	UV
Croissant	Colorado State Univ.	ML	UV
DR Wood	Colorado State Univ.	L	UV
La Paz	Provita	L	USV
Lariat	NDSU	L	USV
Long's Peak	Colorado State Univ.	ML	UV
Montrose	Colorado State Univ.	ML	V/UV
Monterrey	Provita	ME	USV
ND Falcon	NDSU	L	USV
ND-Palomino ³	NDSU	ML	USV
Radiant ³	Provita	ML	USV
Stampede	NDSU	M	USV
StayBright ³	Colorado State Univ.	ML/L	UV
Torreón	Provita	M	USV
Vibrant ³	Provita	E	USV
Windbreaker	Seminis	M	UV

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.

³Slow darkening cultivar.

Table 17. Navy Bean Variety Descriptions.

Class and Cultivar	Origin	RM¹	Plant Type²
<u>NAVY</u>			
AAC Argosy	Ag. Can./ Univ. Guelph	ML	USV
AAC Shock	Ag. Can./ Univ. Guelph	ME	USV
AC Portage	Meridian	ME	B
Blizzard	Provita	M	USV
HMS Medalist	AmeriSeed	M	UV
Nautica	Ag. Can.	ML	USV
T9905	Hyland	M	USV

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 18. Small Red, Black and Pink Bean Variety Descriptions.

Class and Cultivar	Origin	RM ¹	Plant Type ²
<u>SMALL RED</u>			
Merlot	MSU	ME	USV
Viper	Provita	M	USV
<u>BLACK</u>			
AAC Knight Rider	Meridian	ML	USV
Black Tails	Provita	M	USV
Eclipse	NDSU	M	USV
Loreto	Provita	M	USV
Zorro	MSU	L	USV
<u>PINK</u>			
Rosetta	MSU/ARS	M	USV

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 19. Light Red, Dark Red and White Kidney, Great Northern and Cranberry Bean Variety Descriptions.

Class and Cultivar	Origin	RM ¹	Plant Type ²
<u>LIGHT RED KIDNEY</u>			
Big Red	Provita	ML	B
California Early (CELRK)	U. Calif.	E	B
Clouseau	Seminis	ML	B
Coho	MSU	ML	B
Foxfire	Rogers	ME	B
OAC Inferno	U. of Guelph	ML	B
Pink Panther	Seminis	M	B
Red Dawn	Provita	M	B
Ronnie's Red	Provita	ML	B
Rosie	NDSU	L	B
<u>DARK RED KIDNEY</u>			
Chaparral	Provita	ML	B
Dynasty	U. of Guelph	ML	B
Epic	Provita	ML	B
Montcalm	MSU	ML	B
Rampart	Provita	M	B
Red Cedar	MSU	ML	UV
Red Hawk	MSU	M	B
Red Rover	Seminis	ME	B
Spire	Provita	ML	B
Talon	NDSU	M	B
<u>WHITE KIDNEY</u>			
Beluga	MSU	M	B
ND Whitetail	NDSU	M	B
<u>GREAT NORTHERN</u>			
ND Pegasus	NDSU	ML	UV
Powderhorn	MSU	M	USV
<u>CRANBERRY</u>			
AAC Scotty	Ag. Can./Meridian	ML	B
Etna	Seminis	E	B
Vero	ADM-Seedwest	M	B

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.

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