

68th Annual Report
National Cooperative Dry Bean
Nurseries

2017

Compiled by
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Univ. of Nebraska, Panhandle Res. and Ext. Center

**Cooperative Investigation among California, Colorado, Idaho,
Maryland, Michigan, Montana, Nebraska, North Dakota,
Washington, and Wyoming -State Experiment Stations and
Agricultural Research Centers- as part of the Regional W-3150
Multi-State Project**

and

University of Guelph, Canada

and

Agriculture Research Service – USDA

Call for 2018 Cooperative Dry Bean Nursery

Seed Submissions

It is time to request seed submission for 2018 Cooperative Dry Bean Nurseries. I would like to receive **the list of seed submission** no later than **April 8, 2018** and **the seed** must be here no later than **April 15, 2018**. All entries will be planted in replicated test plots across several locations in the United State and Canada. Data will be taken for seed yield, 100-seed weight and several agronomic and marketing characteristics. They will also be included in several disease nurseries including bean rust and Michigan will conduct canning tests.

The seed requirements for each of the three groups are as follows:

1. Small-seeded (Black, Navy, Others): **~15 lbs/line**.
2. Medium-seeded (Great Northern, Pink, Pinto, Small Red, Others): **~25 lbs/line**.
3. Large-seeded (Cranberry, Kidney, Others): **~35 lbs/line**.

Or 20,000 seeds

As in the past, all lines must be:

- X Western grown (West of the Rocky Mountain)
- X Pathogen free
- X If susceptible to BCMV, an ELISA test will be required.
- X Acceptable commercial quality (no broken, decayed, or off color seed)
- X **Seed should be untreated**

Fees: This fee structure was decided by the W-1150 members at The Annual meeting in Mayaguez, Puerto Rico in 2003as follows:

- Public institutions: \$150/line submitted
- Private institutions: \$300/line submitted

NURSERY OPERATIONS

Public institutions that request a nursery will be charged US \$150 to defray seed handling expenses including treating, bagging, boxing and shipping costs. Please let me know if your institution is going to submit the seeds and participate in the field trial for 2018 CDBN. Should you have any questions or concerns about the submission or participant fees please contact me or if you know anyone else who might like to submit seed or plant the nursery please let me know.

Contact and Shipping Information:

Dr. Carlos Urrea
University of Nebraska
Panhandle Research & Extension Center
4502 Avenue I
Scottsbluff, NE 69631
Office (308) 632-0556
Email: currea2@unl.edu

Table 1. List of Contributors and Cooperators - 2017

Name	Location	Seed Submitted	Planting seed	Locations No.
Shree Singh	Kimberly, ID	yes		
Mike Moore	Powell, WY		yes	1
Paul Gepts, Antonia Palkovic	Davis, CA		yes	2
Phil Miklas	Othello, WA	yes	yes	3
Mark Brick, Barry Ogg	Ft. Collins, CO	yes	yes, rust test	4
Juan M. Osorno	Hatton, ND; Staples, MN	yes	yes	5
Carlos Urrea, Jim Schild	Scottsbluff, NE	yes	yes	6
Jim Kelly, Evan Wright	Frankenmuth, MI		yes	7
Chengci Chen	Sidney, MT			
Peter Pauls, Tom Smith	Elora R.S, Ont	yes	yes	8
Talo Pastor- Corrales	Beltsville, MD		yes (rust test)	9
Jim Heitholt	Lingle, WY		yes	10
Bill Dean	Kimberly, ID			
Phillip Griffiths	Cornell, NY	yes		
James Beaver	Isabela, PR			

Table 2. Contact information for 2016 Cooperative Dry Bean Nursery

Loc	First	Last	Affiliation	E-Mail	Phone
CA	Paul	Gepts	University of CA – Davis	plgepts@ucdavis.edu	530-752-774
	Antonia	Palkovic	University of CA – Davis	antoniapalkovic@gmail.com	
CO	Mark	Brick	Colorado State University	Mark.Brick@colostate.edu	970-491-6551
	Barry	Ogg	Colorado State University	Barry.Ogg@Colostate.edu	
ID	Shree	Singh	University of Idaho	singh@uidaho.edu	208-423-6559
	John	Dean	Idaho Seed Bean Co.	isbco@filertel.com	208-734-5221
MD	Marcial (Talo)	Pastor-Corrales	USDA/ARS	talo.pastor-corrales@ars.usda.gov	301-504-6600
MI	Jim	Kelly	Michigan State University	kellyj@msu.edu	517-355-0271
ND	Juan	Osorno	North Dakota State University	juan.osorno@ndsu.edu	701-231-8145
NE	Jim	Schild	University of Nebraska	jschild@unl.edu	308-632-1480
	Carlos	Urrea	University of Nebraska	currea2@unl.edu	308-632-0556
NY	Phillip	Griffiths	Cornell University	pdg8@cornell.edu	315-787-2222
ON	Peter	Pauls	University of Guelph	ppauls@uoguelph.ca	519-824-4120 ext 52460
	Tom	Smith	University of Guelph	thsmith@uoguelph.ca	519-824-4120 ext 8339
PR	James	Beaver	University of Puerto Rico	j_beaver@hotmail.com	787-832-4040 ext. 2566
WA	Phil	Miklas	USDA-ARS	phil.miklas@ars.usda.gov	509-786-9258
WY	Mike	Moore	University of Wyoming	mdmoore@uwyo.edu	307-754-9815
	Jim	Heitholt	University of Wyoming	Jim.Heitholt@uwyo.edu	307-776-3104

Table 3. List of 2017 Cooperative Dry Bean Nursery Entries.

Entry No.	Line	Market class	From	Source
1	PT10-12-1	pinto	P. Miklas	WA
3	Black Foot	pinto	S. Singh	ID
4	Nez Perce	pinto	S. Singh	ID
5	Twin Falls	pinto	S. Singh	ID
6	La Paz	Pinto	Provita	ID
7	Othello	Pinto	Treasure Valley	ID
20	DR Wood (CO 14790-3)	Pinto	M. Brick	CO
8	Staybright	SLD PINTO	M. Brick	CO
9	Sundance (COSD 7)	SLD PINTO	C. Urrea	CO
10	Palomino	SLD PINTO	J. Osorno, P. Miklas	ND, WA
2	NE2-16-33	SLD PINTO	C. Urrea	NE
11	SR10-2-1	Small red	P. Miklas	WA
12	ACUG 13-SR1	Small red	T. Smith	ON
13	ACUG 15-B4	Black	T. Smith	ON
15	Eclipse	Black	Treasure Valley	ID
14	ACUG 14-1	navy	T. Smith	ON
16	Dynasty	DRK	T. Smith	ON
17	DRK 1	DRK	Griffs	Cornell
18	Cornell 612	LRK	Griffs	Cornell
19	CELRK	LRK	Provita	ID

The 2017 CDBN

The 2017 CDBN comprised 20 test entries and four checks.

Agronomic nurseries

There were approximately 1600 seeds supplied to each location sufficient to plant four 4-row replications, 20 to 25 feet long, for each entry. Seed treatment was provided by Syngenta Seed Co. and consisted of Cruiser, Maxim XL + Apron XL (MSDS are included with bean shipment unless nursery operator requested otherwise).

Disease Nurseries

There were 400 seeds (untreated) supplied to Beltsville, MD, for rust screening.

DATA RECORDING AND SCALES

The following were commonly recorded data by the CDBN collaborators. For ease and uniformity of reporting we shall describe and abbreviate each trait:

1. **Early Vigor (EV):** Scored on a 1 to 9 scale, where 1= excellent and 9= very poor, within the first 3 weeks after emergence.
2. **Days to Flower (DF):** Actual number of days from planting to when approximately 50% plants in a plot have at least one opened flower.
3. **Days to Maturity (DM):** Actual number of days from planting to when approximately 50% of plants in a plot have at least one dry pod.
4. **Plant Height (PH):** Record in cm from the base of the plant (soil surface) to the top node bearing at least one dry pod with seed.
5. **Growth Habit (GH):** Record during flowering and verified when crop is senescent as type I=determinate erect or upright, II= indeterminate erect, and III= indeterminate prostrate.
6. **Lodging (LG):** Scored at harvest on a 1 to 9 scale, where 1= 100% plants standing erect, and 9= 100% plants lay flat on the ground.
7. **Pod Clearance (PC):** Recorded at harvest as percent of pods on plants not touching the ground or in contact with the soil surface.
8. **Biomass Yield (BY):** Total plant dry weight recorded at 12% moisture and rounded up to the nearest whole number (lb/a).
9. **Seed Yield (SY):** Recorded in lb/a at 12 % moisture and rounded up to the nearest whole number.
10. **Harvest Index (HI):** The ratio of SY/BY expressed in % BY at 12% moisture.
11. **Weight of 100 seeds (SW):** Weight of 100 randomly taken undamaged seed in grams at 12 % moisture.
12. **Appearance Desirability (SD):** An aggregate value for seed size, shape, color and brilliance for the respective market class recorded by various scales (see footnotes).

For other traits and scoring methods, a footnote is provided with associated details.

Table 4. Summary Agronomic and Bean Rust Reaction Data for the 2016 CDBN[†].

Entry No.	Line	Market class	Yield	100-seed weight	Days to Flowering	Harvest Maturity	Rust (MD)		Rust (CO)
			lbs/acre	g 100 seeds ⁻¹	days	days	(1-9)	Grade	(1-6)
1	PT10-12-1	pinto	2740	35.1	48	95	3	R	3
3	Black Foot	pinto	1868	32.3	47	89	3	R	1
4	Nez Perce	pinto	2385	31.4	48	95	3	R	1
5	Twin Falls	pinto	2531	32.6	52	97	3	R	1
6	La Paz	Pinto	2902	37.7	51	94	5	S	2
7	Othello	Pinto	2302	36.3	44	86	5,6	S	5,6
20	DR Wood (CO 14790-3)	Pinto	2796	36.8	49	97	1	R	3
8	Staybright	SLD PINTO	2698	34.9	49	97	1	R	2
9	Sundance (COSD 7)	SLD PINTO	2537	36.9	47	93	1	R	3
10	Palomino	SLD PINTO	2563	37.1	47	96	4,5,6	S	5,6
2	NE2-16-33	SLD PINTO	2767	40.5	47	95	3	R	1
11	SR10-2-1	Small red	2645	36.6	48	92	4,5,6	S	5,6
12	ACUG 13-SR1	Small red	2688	22.9	51	96	1	R	3
13	ACUG 15-B4	Black	3219	22.3	53	97	4	I	5,6
15	Eclipse	Black	2793	21.1	52	94	1	R	1
14	ACUG 14-1	navy	2545	22.5	48	92	4,5	S	1
16	Dynasty	DRK	2818	59.6	45	95	3	R	4
17	DRK 1	DRK	2392	46.6	46	94	3,4	I	4
18	Cornell 612	LRK	2397	52.6	45	92	3	R	4
19	CELRK	LRK	2102	57.8	42	87	6,7	S	4
	Mean		2567	35.7	47	94			

[†] Across locations not all market classes are tested in the exact same trial. At certain locations large, medium and small seeded market classes are tested in different trials within the same field or in completely different locations. California yield data was removed from the overall mean.

Table 5. 2017 CDBN. Summary for seed yield (lbs/acre) for individual locations.

Entry No.	Line	Market Class	MI	ND	NE	ON	WA	Powell, WY	Lingle, WY	CA [‡]	Average
1	PT10-12-1	pinto	1633	2880	4023	2381	2358	3033	2870	898	2740
3	Black Foot	pinto	759	1720	2979	1968	857	2365	2430	331	1868
4	Nez Perce	pinto	1410	2120	3841	2232	1910	2335	2850	604	2385
5	Twin Falls	pinto	1923	2340	3426	2469	1961	2921	2680	510	2531
6	La Paz	Pinto	2187	2710	4329	2472	2649	3155	2810	771	2902
7	Othello	Pinto	1171	2080	4091	1277	1429	3096	2970	346	2302
20	DR Wood (CO 14790-3)	Pinto	2114	2600	3502	2757	2767	2989	2840	987	2796
8	Staybright	SLD PINTO	2202	2320	3393	2541	2119	3403	2910	337	2698
9	Sundance (COSD 7)	SLD PINTO	1898	2610	3676	2336	1557	2780	2900	289	2537
10	Palomino	SLD PINTO	1352	2230	3924	2187	1505	3264	3480	170	2563
2	NE2-16-33	SLD PINTO	2080	2710	4224	2386	2194	2615	3160	411	2767
11	SR10-2-1	Small red	1580	3060	3875	2133	.	2344	2880	227	2645
12	ACUG 13-SR1	Small red	1659	3250	3645	2544	.	2161	2870	584	2688
13	ACUG 15-B4	Black	2003	3110	4421	3660	.	3019	3100	482	3219
15	Eclipse	Black	1906	2660	3620	2858	.	3026	2690	404	2793
14	ACUG 14-1	navy	2294	2710	2098	3358	.	1918	2890	432	2545
16	Dynasty	DRK	3856	1590	3882	2228	.	2912	2440	455	2818
17	DRK 1	DRK	3798	920	3190	1172	.	2592	2680	92	2392
18	Cornell 612	LRK	3814	1180	3365	2319	.	1984	1720	114	2397
19	CELRK	LRK	2987	1160	2215	1554	.	2137	2560	817	2102
	Mean		2131	2570	3586	2342	1937	2702	2702		2567
	CV %		11.5	12.6	8.7	14.5	22	19.1	15		
	LSD 0.05		281	460	440	402	623	857	601		
	Mean[‡]			1210							
	CV %[‡]			28.6							
	LSD 0.05[‡]			NS							

[‡] Staples, MN

[‡] Average yield (lb/a) if missing plots are not included in mean. This data was removed from the overall mean.

Table 6. 2017 CDBN. Summary for 100-seed weight (g) for individual locations.

Entry No.	Line	Market class	MI	ND	Scottsbluff, NE	Prosser, WA	Powell, WY	Lingle, WY	Average
			gr						
1	PT10-12-1	pinto	39.4	28.8	32.8	42.8	35	31.9	35.1
3	Black Foot	pinto	34.2	17.2	34.0	38.3	36	34.1	32.3
4	Nez Perce	pinto	35.8	21.2	28.6	40.2	32	30.9	31.4
5	Twin Falls	pinto	39.5	23.4	31.5	37.7	34	29.6	32.6
6	La Paz	Pinto	44.3	27.1	35.8	47.5	38	33.6	37.7
7	Othello	Pinto	42.6	20.8	39.1	40.1	39	36.0	36.3
20	DR Wood (CO 14790-3)	Pinto	45.8	26.0	36.2	42.3	36	34.6	36.8
8	Staybright	SLD PINTO	39.0	23.2	37.8	42.2	36	31.3	34.9
9	Sundance (COSD 7)	SLD PINTO	41.0	26.1	39.6	45.6	36	33.1	36.9
10	Palomino	SLD PINTO	41.8	22.3	36.1	47.7	39	35.7	37.1
2	NE2-16-33	SLD PINTO	48.7	27.1	41.8	46.9	41	37.5	40.5
11	SR10-2-1	Small red	42.3	30.6	37.7	.	39	33.6	36.6
12	ACUG 13-SR1	Small red	24.6	32.5	19.4	.	20	17.9	22.9
13	ACUG 15-B4	Black	21.9	31.1	20.4	.	21	17.2	22.3
15	Eclipse	Black	21.7	26.6	19.6	.	20	17.7	21.1
14	ACUG 14-1	navy	22.4	27.1	21.0	.	22	19.7	22.5
16	Dynasty	DRK	73.8	60.1	58.0	.	57	49.3	59.6
17	DRK 1	DRK	58.6	43	46.4	.	46	38.8	46.6
18	Cornell 612	LRK	65.8	49.9	54.1	.	54	39.1	52.6
19	CELRK	LRK	74.4	50.9	51.8	.	58	54.0	57.8
	Mean		42.9	25.7	36.1	43	37	29.7	35.7
	CV %		3.1	12.6	3.56	4	4	5	
	LSD 0.05		1.8	4.6	1.82	3.8	2	.	
	Mean[‡]			51					
	CV %[‡]			8.4					
	LSD 0.05[‡]			6.9					

Table 7. 2017 CDBN. Summary for Days to Flowering (days) and Day To Harvest Maturity (days) for individual locations.

Entry No.	Market Class	Days to Flowering							Dys to Harvest Matutiry							
		CO	MI	ND	Powell, WY	Lingle, WY	CA	Mean	CO	MI	ND	NE	ON	WA	Powell, WY	Mean
1	PT10-12-1	44.5	40	49	53	51	53	48	90	94	99	97.3	99.8	97	88	95
3	Black Foot	43	41	48	51	48	53	47	81.8	91	96	93.3	92.0	86	81	89
4	Nez Perce	43.8	42	49	54	48	52	48	90.5	94	103	95.0	98.0	99	87	95
5	Twin Falls	47	45	51	56	56	56	52	88.3	95	102	96.0	104.8	102	90	97
6	La Paz	45.5	44	51	56	56	53	51	89.8	93	100	93.5	96.0	99	90	94
7	Othello	33.3	39	47	49	47	50	44	73.8	90	95	90.8	87.5	85	77	86
20	DR Wood (CO 14790-3)	43.5	44	50	54	49	54	49	88	101	108	102.0	99.0	95	88	97
8	Staybright	42.8	42	50	54	51	52	49	88.5	94	106	97.3	98.0	105	90	97
9	Sundance (COSD 7)	42.5	41	49	51	47	50	47	84	93	103	96.3	94.3	98	85	93
10	Palomino	42.8	40	47	49	47	56	47	85	98	102	98.0	93.8	111	85	96
2	NE2-16-33	40	42	49	51	48	50	47	87.3	95	105	98.5	95.3	97	88	95
11	SR10-2-1	44.8	40	50	52	50	53	48	87.8	92	97	95.3	94.8	.	86	92
12	ACUG 13-SR1	47.8	45	52	57	52	52	51	89.3	93	104	99.0	104.5	.	89	96
13	ACUG 15-B4	46.5	47	52	57	56	57	53	90.8	90	106	96.5	106.8	.	93	97
15	Eclipse	45.8	47	51	57	56	56	52	87	89	105	95.8	98.0	.	88	94
14	ACUG 14-1	43	43	49	50	47	55	48	81.3	89	103	94.0	97.3	.	86	92
16	Dynasty	38.3	37	.	49	48	52	45	84.8	103	.	99.3	97.3	.	91	95
17	DRK 1	39.3	36	.	50	52	54	46	86.3	99	.	99.8	91.5	.	92	94
18	Cornell 612	39	37	.	49	48	53	45	82.5	100	.	100.0	92.0	.	86	92
19	CELRK	34.8	34	.	49	47	45	42	75.8	97	.	93.3	90.3	.	81	87
	Mean	42.4	41.3	50	52	50	.	47	85.6	94.5	102	96.5	96.53	97	87	94
	CV%	2.5	2.6	3	2.4	4	.		2.1	1.2	3	4.13	2.36	4	1.5	
	LSD 0.05	1.5	1.8	2	2	3	.		2.5	1.6	5	5.64	2.69	5	2	

Table 8. Bean Rust reaction at Beltsville, MD and Bean Rust at Fort Collins, CO in 2017.

Entry No.	Line	Market class	MD			CO
			Rust			Rust
			I	II	Final	
			(1-9) [†]			(1-6) [‡]
1	PT10-12-1	pinto	3	3	3	3
3	Black Foot	pinto	3	3	3	1
4	Nez Perce	pinto	1	3	3	1
5	Twin Falls	pinto	3	1	3	1
6	La Paz	Pinto	4,5	4	4,5	2
7	Othello	Pinto	4,5	5,6,4	5,6	5,6
20	DR Wood (CO 14790-3)	Pinto	1	1	1	3
8	Staybright	SLD PINTO	1	1	1	2
9	Sundance (COSD 7)	SLD PINTO	1	1	1	3
10	Palomino	SLD PINTO	4,5,6	4,5	4,5,6	5,6
2	NE2-16-33	SLD PINTO	1	3	3	1
11	SR10-2-1	Small red	4,5,6	5,6,4	4,5,6	5,6
12	ACUG 13-SR1	Small red	1	1	1	3
13	ACUG 15-B4	Black	4,5,6	1	4	5,6
15	Eclipse	Black	1	1	1	1
14	ACUG 14-1	navy	4,5	3	4,5	1
16	Dynasty	DRK	4,5	1	3	4
17	DRK 1	DRK	3,4	3,4	3,4	4
18	Cornell 612	LRK	1	4	3	4
19	CELRK	LRK	4,5	7,8	6,7	4
	Checks					
	Pinto 114	Susceptible	4,5,6	4,5,6	4,5,6	
	Aurora	Intermediate	4,5	4,5	4,5	
	Buster	Resistant	1	1	1	

[†]Bean rust evaluation Scale: 1 to 9, where 1, 2, 3 are resistant; 4, 5, 6 are intermediate; and 7, 8, 9, are susceptible. Symptoms of the rust disease under field conditions in 2017 were lower than usual, due to drought and high temperatures during flowering and pod setting. See the rust note of the susceptible check Pinto 114 that usually is 8,9 but in 2017 the rust note was lower(4,5,6). The following entries were also evaluated in 2016 and 2017 and their rust notes were (rust note in 1916/rust note in 1917): Dynasty: 3/3; Othello: 6,7/5,6; Palomino: 7/4,5,6; La Paz:3/4,5. 2017 CDBN entries Staybright (COSD 35), COSD 7, ACUG13-SR-1, Eclipse, and CO 14790-3 were highly resistant (with rust note of 1) in 2016 and in 2017.

[‡] Bean Rust reaction to local endemic Colorado races: 1=no symptoms, 2 necrotic flecks, 3=small pustule, 4,5, or 6=susceptible.

Table 9. Miscellaneous trait data for 2017 CDBN.

Entry No.	Line	Market class	MI	ND	Lingle, WY	MI	WA	NE	ON		MI
			Plant Height			Lodging		Test Weight	Yield Mat Index	Harvestability	Agron. Score
			cm			(1-5)	(1-9)	lbs/bu		(1-5)	(1-7)
1	PT10-12-1	pinto	48.3	62	58	1.0	2.3	61.5	23.9	3.4	5.0
3	Black Foot	pinto	45.3	41	48	1.3	3.5	58.9	21.4	3.8	3.0
4	Nez Perce	pinto	48.0	52	71	2.0	6.3	60.7	22.8	3.5	4.0
5	Twin Falls	pinto	49.3	58	66	1.0	1.0	61.1	23.6	2.9	5.7
6	La Paz	Pinto	48.3	57	79	1.0	1.3	61.7	25.7	2.0	4.7
7	Othello	Pinto	42.3	40	61	2.7	8.3	61.0	14.6	3.4	3.0
20	DR Wood (CO 14790-3)	Pinto	49.3	59	71	1.3	3.5	60.5	27.8	2.9	4.3
8	Staybright	SLD PINTO	49.0	60	74	1.0	4.5	61.9	25.9	1.8	5.3
9	Sundance (COSD 7)	SLD PINTO	47.0	61	76	1.0	5.0	60.3	24.8	2.4	3.0
10	Palomino	SLD PINTO	47.3	53	74	2.0	6.0	59.2	23.3	2.8	4.0
2	NE2-16-33	SLD Pinto	45.7	55	79	3.0	7.0	58.2	25.1	4.0	3.0
11	SR10-2-1	small red	46.5	52	69	1.0	.	62.1	22.5	1.9	4.0
12	ACUG 13-SR1	small red	46.5	58	64	1.0	.	63.9	24.3	1.4	4.0
13	ACUG 15-B4	black	47.8	60	56	1.0	.	62.4	34.3	2.1	4.0
15	Eclipse	Black	47.3	56	56	1.0	.	62.1	29.2	1.4	4.0
14	ACUG 14-1	navy	48.0	52	69	1.0	.	62.4	34.5	2.4	4.0
16	Dynasty	DRK	48.5	59	56	1.3	.	58.7	22.9	3.3	4.0
17	DRK 1	DRK	46.5	43	46	1.0	.	57.6	12.8	3.0	4.0
18	Cornell 612	LRK	48.0	56	43	1.5	.	55.9	25.2	3.0	3.3
19	CELRK	LRK	45.3	47	41	1.0	.	59.3	17.2	3.0	3.0
		Mean	47.2	55	64	1.4	4.4	60.5		2.7	4.0
		CV %	2.5	9	12	19.5	19.0	0.9		22.5	14.4
		LSD 0.05	1.6	7	.	0.4	1.2	0.8		0.7	0.9
		Mean[‡]		51							
		CV %[‡]		13							
		LSD 0.05[‡]		10							

[‡] Staples, MN

Table 10. Canning data for 2017 CDBN from Michigan.

Entry No.	Line	Market class	Canning Score
			(1-5) [†]
1	PT10-12-1	pinto	2.1
3	Black Foot	pinto	3.3
4	Nez Perce	pinto	3.2
5	Twin Falls	pinto	3.1
6	La Paz	Pinto	2.1
7	Othello	Pinto	3.6
20	DR Wood (CO 14790-3)	Pinto	2.1
8	Staybright	SLD PINTO	4.3
9	Sundance (COSD 7)	SLD PINTO	2.6
10	Palomino	SLD PINTO	3.2
2	NE2-16-33	SLD PINTO	2.3
11	SR10-2-1	small red	2.6
12	ACUG 13-SR1	small red	3.8
13	ACUG 15-B4	black	3.3
15	Eclipse	Black	3
14	ACUG 14-1	navy	3.4
16	Dynasty	DRK	3.3
17	DRK 1	DRK	3.4
18	Cornell 612	LRK	3.2
19	CELRK	LRK	1.7

[†]These are visual ratings based on overall appearance averaged across a group of ~15 evaluators. The scale is 1 to 5, where 1=undesirable and 5=highly desirable

2017 CDBN Notes

2017 Dry Bean Performance Evaluation

Mike Moore and Jolene Sweet, Wyoming Seed Certification Service; Camby Reynolds and Andi Pierson, Powell Research and Extension Center.

In 2015, Wyoming ranked ninth nationally in dry bean (*Phaseolus vulgaris* L.) production, and fourth in the production of pinto beans. In the same year, Wyoming growers produced 542,000 hundred-weight of pinto beans on 31,000 harvested acres, averaging 23 hundred-weight per acre. The University of Wyoming Seed Certification Service coordinates the dry bean variety performance evaluation at this location in a continuous and on-going program. In cooperation with the National Cooperative Dry Bean Nursery, a wide range of germplasm is evaluated each year, assisting producers in selecting varieties best suited for Wyoming soils and climate.

Materials and Methods

The experiment was located at the University of Wyoming Research and Extension Center in Powell, Wyoming. The soil, a Garland clay loam, (fine, mixed, mesic: Typic Haplarid), was prepared by roller harrow and leveled in the spring. Chemical weed control consisted of a preplant incorporated chemical treatment of 40 ounces of Eptam and 2 pints of Sonalan applied on May 24. The plots received 60 units of N, 30 units of P and 5 units of Zn per acre on May 30. The plots were planted on June 2 in three row plots that were 5.5 feet wide by 20 feet long. IH 185 planter units with cone attachments were used, set on 22-inch row spacing. The experimental design was a randomized block with 4 replications. Cultivation controlled weed escapes during the growing season. Furrow irrigation was applied on June 6, July 10, July 20, and August 10, August 20, and August 31. Visual estimates for days to 50 percent bloom (50 percent of plants at second bloom) and days to maturity (50 percent of the plants with one buckskin pod) were made. Subplots of one row by 10 feet were pulled by hand, and plots were threshed with an Almaco stationary plot thresher. The seed was hand-picked to remove dirt clods and seed mixtures. Samples were then weighed for clean seed yield per plot and seeds per pound.

Results and Discussion

Stand establishment was erratic due to a heavy rain after planting that created a thick soil crust. Summer temperatures and precipitation were reasonable, and while all entries matured prior to the first frost, precipitation delayed threshing.

Acknowledgements

This nursery was possible only with significant assistance. Powell R & E Center staff managed the plots and Andi Pierson assisted with statistical analysis.

CDBN trial planted at Agronomy Field Headquarters in Davis

Due to very high lygus pressure, mites, and wind, many of the entries had no yield for some plots. However, I did not think giving those plots zero for yield in the average of three reps was really representative of their yield potential. I include two averages for each entry: one assuming missing yield for a plot was a yield of zero to be included in the average, and the other treating the data as missing and calculating the mean without it. The standard deviation does not include the zero yield values. Days to flowering is averaged across all 3 reps of each entry.

CDBN trial planted in Fort Collins, CO

Plots planted 6/10/2016, Undercut with Pickett One-Step 9/22, plots lost to wind.
