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2020 Nebraska Dry Bean Variety Trials

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In 2020, the PHREC Dry Bean Breeding program conducted twelve replicated field trials at two locations, the Scottsbluff Ag Lab (Scotts80-Field-6) and the Mitchell Ag lab (Field W6), to evaluate which dry bean entries (varieties/experimental lines) are best suited for western Nebraska. These trials have been ongoing for 39 years as a service to the Nebraska dry bean industry. Information about dry bean variety performance is available on the web at https://go.unl.edu/drybean2020.

Locations and Germplasm

Twelve replicated trials [two great northern (28 entries), two pintos (50 entries), two light red kidney (LRK, 19 entries), two dark red kidney (DRK, 9 entries), two black (18 entries), and two navy (8 entries) were planted at the Scottsbluff and Mitchell Ag Labs on June 10 and 2, respectively.

Soil at the Scottsbluff site (41◦53.6′ N, 103◦40.7′ W, 1200 m elevation) is a Tripp very fine sandy loam (coarse-silty, mixed, superactive, mesic Aridic Haplustolls). Soil at the Mitchell site (41◦56.6′ N, 103◦41.9′ W, 1240 m elevation) is a silt loam (Typic Ustorthents).

Agronomic Management

Scottsbluff Ag Lab

The field at the Scottsbluff Ag Lab was shallow tilled (Landstar) on May 20, plowed on May 27, and sprayed/roller harrowed with Eptam @ 2.5 pts/acre and Sonalan @ 2 pts/acre on May 28.

The field at the Scottsbluff Ag Lab had 26# residual N and a 65# N manure credit, so no additional nitrogen was applied.

The field at the Scottsbluff Ag Lab was irrigated 16 times (12.7 inches) using sprinkler irrigation. It received an additional 2.18 inches of precipitation.

Mitchell Ag Lab

The field at the Mitchell Ag Lab was shallow tilled on May 18, plowed on May 19, and sprayed/roller harrowed with Eptam @ 2.5 pts/acre and Sonalan @ 2 pts/acre on May 24.

The field at the Mitchell Ag Lab had 45# residual N and a 57# N manure credit, so no additional nitrogen was applied.

The field at the Mitchell Ag Lab was irrigated 19 times (14.9 inches) using sprinkler irrigation. It received an additional 1.90 inches of precipitation.

Experimental Design

The entries were assigned to experimental units using a randomized complete block design with four replications. Each plot consisted of four 22-foot rows spaced 22 inches apart. The target plant population was 80,000 plants/acre for all market classes except the LRK/DRK, which had a target population of 100,000 plants/acre. The trials were planted with a Hege cone planter. At the end of the growing season, a plot combine (Wintersteiger Classic) was used to harvest 20 feet of the middle two rows of each plot. Variety/line trials at the Scottsbluff and Mitchell Ag labs were undercut and combined on September 24 and 15, respectively.

Response Variables

Data collected were: yield (lbs/acre adjusted to 14% moisture), DTF (days to flowering, actual number of days from planting to when 50% of the plants had at least one

flower opened), DTM (days to harvest maturity, actual number of days from planting to when 80% of the plants were ready to be harvested), 100-seed counts (weight of 100 seeds in grams adjusted to 14% moisture), test weight (lbs/bushel adjusted to 14% moisture), and growth habit (1= determinate upright; 2a= indeterminate upright short vine; 2b= indeterminate upright long vine; 3a= indeterminate prostrate short vine; 3b= indeterminate prostrate long vine). Data are presented in Tables 1 to 12.

Statistical Analysis

Data were analyzed using PROC MIXED (SAS, 2004). Means were separated using a F-protected LSD. All tests were considered significant at $P \leq 0.05$.

The GRAND MEAN (bottom of each table) refers to the mean of the experiment. The coefficient of variation, expressed as a percentage (CV %), measures the variability of the experiment; large CVs indicate that a large amount of variation cannot be attributed to differences among entries. The LSD (Least Significance Difference) was used to evaluate differences among entries. If the difference between two entries exceeds the LSD value for a particular response variable, the higher value is significantly greater with 95% probability (0.05 level). If the difference between two entries is less than the LSD value, the values are considered similar.

List of Tables

Acknowledgments

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This publication has been peer reviewed.
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Table 1. 2020 Great Northern Variety Trial—Scottsbluff Ag Lab.

Ent (no)	ID	Yield (lbs/acre)	Flowering (days)	Maturity (days)	100-SeedWeight (gr)	Moisture (%)	Test Weight (lbs/bu)	Growth Habit
1	Aries	3181	42	85	34.9	9.6	64.6	3a
2	Hydra	3254	42	89	44.4	9.9	64.0	3a
3	Draco	3186	45	90	35.1	9.8	63.6	3a
4	Andromeda (13151)	2779	41	82	41.2	9.8	62.0	3a
5	Virgo (13172)	2899	42	89	34.9	9.7	62.8	2b
6	12134	2958	44	88	36.2	9.8	62.2	2b
7	14164	3213	43	84	37.3	9.7	63.9	2b
8	14172	3232	45	91	35.0	9.6	63.4	2b/3b
9	15215	3500	42	89	36.2	9.7	64.7	2b/3b
10	16208	3368	45	91	35.2	9.8	63.8	3a
11	16209	3017	42	88	36.5	9.4	61.8	3a
12	16213	3252	41	88	42.5	9.8	64.1	2b
13	17205	3024	42	86	39.5	9.8	64.8	2b/3b
14	17227	4015	42	87	36.7	9.7	61.9	2b/3b
15	Panhandle Pride	3356	42	83	35.2	9.7	65.9	3a
16	NE1-17-9	3392	42	84	36.3	9.5	63.5	2b
17	NE1-17-19	2699	41	93	38.2	9.8	62.9	2b/3b
18	NE1-17-27	3320	41	87	40.8	10.1	63.9	2b
19	NE1-17-29	3420	43	84	36.2	9.6	62.5	2b
20	NE1-17-45	3456	41	84	39.6	10.2	63.9	2b/3b
21	NE1-17-10	3739	44	85	35.4	9.6	63.1	2b
22	NE1-17-36	3526	42	90	38.1	9.8	62.3	2b/3b
23	NE1-17-41	3033	41	84	39.7	10.1	63.7	2b
24	NE1-17-43	3125	40	92	40.0	9.9	63.7	3a
25	NE1-17-22	3839	41	86	41.8	9.5	63.4	2b/3b
26	NE1-17-31	3859	44	90	39.9	9.8	62.2	2b
27	NE3-17-18	3233	42	86	36.4	9.8	63.1	3a
28	Coyne	3218	41	85	37.1	9.7	64.2	2b
	GRAND MEAN	3289	42	87	37.9	9.8	63.4	
	LSD 5 %	635	1	3	1.7	0.2	0.9	
	CV %	9.7	1.6	1.9	2.2	1.2	0.7	

Table 2. 2020 Great Northern Variety Trial—Mitchell Ag Lab.

Ent (no)	ID	Yield (lbs/acre)	Flowering (days)	Maturity (days)	100-SeedWeight (gr)	Moisture (%)	Test Weight (lbs/bu)	Growth Habit
1	Aries	3543	44	84	34.7	9.5	64.8	2b
2	Hydra	3262	44	86	43.5	9.9	64.5	3a
3	Draco	3251	47	87	34.4	9.8	63.5	3a
4	Andromeda (13151)	3567	43	84	43.1	9.5	63.6	3a
5	Virgo (13172)	3736	44	87	36.6	9.7	63.9	2b/3b
6	12134	3334	46	87	38.7	9.8	62.6	2b
7	14164	3496	45	83	37.1	9.7	64.0	2b
8	14172	3011	47	87	34.3	9.5	63.9	2b

Table 2. 2020 Great Northern Variety Trial—Mitchell Ag Lab. (continued)

Ent (no)	ID	Yield (lbs/acre)	Flowering (days)	Maturity (days)	100-SeedWeight (gr)	Moisture (%)	Test Weight (lbs/bu)	Growth Habit
9	15215	3649	45	87	37.7	9.7	64.7	3a
10	16208	3610	47	89	35.3	9.7	64.4	3a
11	16209	3502	45	88	36.1	9.6	63.2	3a
12	16213	3422	44	87	43.3	9.7	64.2	3a
13	17205	3530	43	85	37.4	9.7	65.2	3a
14	17227	3949	45	86	37.4	9.7	63.1	3a
15	Panhandle Pride	3508	43	85	35.0	9.6	65.6	2b/3b
16	NE1-17-9	3654	44	85	37.1	9.5	63.9	2b/3b
17	NE1-17-19	3435	43	88	39.3	9.7	63.2	3a
18	NE1-17-27	3525	43	85	40.6	10.1	63.8	3a
19	NE1-17-29	3459	44	85	37.1	9.6	63.6	2b/3b
20	NE1-17-45	3522	43	84	41.3	9.9	64.9	2b
21	NE1-17-10	3582	45	83	33.9	9.4	63.5	2b
22	NE1-17-36	3610	45	85	39.2	9.8	63.1	2b
23	NE1-17-41	3309	42	83	40.3	9.8	64.9	2b
24	NE1-17-43	3214	42	86	40.1	9.8	64.0	3a
25	NE1-17-22	4006	43	85	40.5	9.6	64.5	3a
26	NE1-17-31	3790	45	86	39.5	9.6	61.9	2b
27	NE3-17-18	3361	45	85	37.0	9.8	63.8	2b/3b
28	Coyne	3487	43	84	37.7	9.9	64.4	3a
	GRAND MEAN	3512	44	85	38.2	9.7	63.9	
	LSD 5 %	470	1	1	1.9	0.2	0.7	
	CV %	6.7	1.2	0.8	2.5	1.3	0.5	

Table 3. 2020 Pinto Variety Trial—Scottsbluff Ag Lab.

Ent (no)	ID	Yield (lbs/acre)	Flowering (days)	Maturity (days)	100-SeedWeight (gr)	Moisture (%)	Test Weight (lbs/bu)	Growth Habit
1	GTS-904	3458	45	92	38.6	9.5	61.9	3a
2	GTS-907	3750	41	83	35.0	9.5	62.4	2b/3b
3	La Paz	3457	47	88	32.5	9.8	63.4	2b
4	Monterrey	3276	47	89	31.6	9.7	64.1	3a
5	Torreon	3963	44	84	35.5	9.7	64.1	2b
6	Vibrant	3701	42	84	36.2	8.9	63.6	2b
7	Radiant	3874	42	84	36.7	9.0	64.3	2b/3b
8	Cowboy	3631	44	83	34.8	9.8	63.9	2b
9	Lumen (14451)	3353	45	90	34.0	10.1	66.3	2b/3b
10	Gleam (14455)	4124	45	87	32.8	9.6	65.3	2b
11	18–453	3032	46	92	36.8	9.1	64.2	3b
12	18–272	3347	42	83	35.4	9.3	63.3	2b
13	18–274	3866	43	82	37.4	9.7	64.1	2b
14	18–283	3522	47	89	41.7	9.6	61.0	2b
15	18–376	3329	44	88	39.9	10.0	64.8	3a
16	18–291	3166	44	94	53.1	8.7	60.0	2b
17	SV6139GR	4120	44	84	34.5	9.6	64.1	2b
18	Windbreaker	3952	42	84	38.4	9.5	61.1	2b/3b

Table 3. 2020 Pinto Variety Trial—Scottsbluff Ag Lab. (continued)

Ent (no)	ID	Yield (lbs/acre)	Flowering (days)	Maturity (days)	100-SeedWeight (gr)	Moisture (%)	Test Weight (lbs/bu)	Growth Habit
19	Staybright	3157	42	88	36.1	9.5	64.1	2b/3b
20	ND Palomino	3883	40	88	37.9	8.8	62.7	2b/3b
21	41767–15	3017	41	82	41.7	9.0	65.2	2b
22	30903–6	3361	41	79	34.4	9.3	63.9	2b
23	30993–27	3486	43	89	36.6	9.5	64.4	2b
24	33503–5	3181	44	92	39.5	9.1	61.3	2b
25	34628–5	3361	44	91	40.7	9.6	62.0	2b
26	52646–14	3008	44	88	42.9	9.5	60.8	2b/3b
27	43732–5	3171	45	94	40.7	9.6	62.4	2b/3b
28	53676–3	2355	49	92	35.1	9.3	59.6	2b
29	EX1843-P	2996	42	83	32.4	9.3	61.1	2b
30	EX1844-P	3492	43	82	37.7	9.4	61.2	2b
31	EX1846-P	3433	43	82	35.8	9.2	60.9	2b
32	Croissant	3609	43	88	37.4	9.2	62.7	2b
33	DR Wood	3502	45	94	37.3	9.6	62.1	2b/3b
34	Long's Peak	3131	45	89	36.8	9.5	62.0	2b
35	Centennial	3345	43	93	37.4	9.3	62.7	2b/3b
36	NE2-17-18	3453	42	92	43.5	9.5	62.4	3a
37	NE2-17-20	3093	43	91	36.6	9.2	62.0	3a
38	NE2-17-37	3045	41	88	35.3	9.6	63.0	2b
39	NE2-17-38	3190	38	85	38.6	9.2	61.6	2b/3b
40	NE2-17-40	3604	43	88	40.8	8.9	63.9	3a
41	NE2-17-41	3114	40	88	40.5	9.3	59.0	3a
42	NE4-17-10	3602	39	84	39.9	9.2	59.8	2b
43	NE4-17-6	3716	38	83	42.2	9.5	61.7	2b
44	NE4-18-16	3408	41	88	43.3	9.9	63.2	2b/3b
45	NE4-18-45	3554	41	89	41.8	9.2	61.3	2b
46	NE4-18-55	3364	42	92	46.8	9.8	62.2	2b
47	NE4-18-40	2904	40	92	38.7	8.8	61.1	3a
48	NE2-17-44	3753	38	89	39.8	9.1	60.6	2b/3b
49	USDA-Rattler	3873	46	91	35.2	9.4	62.1	2b
50	PT16–9	2911	45	90	35.8	9.8	63.1	2b
	GRAND MEAN	3420	43	88	38.1	9.4	62.6	
	LSD 5 %	614	1	3	1.8	0.3	0.9	
	CV %	9.1	1.8	1.8	2.4	1.8	0.7	

Table 4. 2020 Pinto Variety Trial—Mitchell Ag Lab.

Ent (no)	ID	Yield (lbs/acre)	Flowering (days)	Maturity (days)	100-SeedWeight (gr)	Moisture (%)	Test Weight (lbs/bu)	Growth Habit
1	GTS-904	3864	47	89	39.9	9.8	61.9	3a
2	GTS-907	3856	44	83	37.7	9.5	63.2	3a
3	La Paz	3696	48	88	34.2	9.8	64.5	2b
4	Monterrey	3708	47	87	34.1	10.0	64.0	2b
5	Torreon	3685	47	87	37.6	9.7	65.0	2b

Table 4. 2020 Pinto Variety Trial—Mitchell Ag Lab. (continued)

Ent (no)	ID	Yield (lbs/acre)	Flowering (days)	Maturity (days)	100-SeedWeight (gr)	Moisture (%)	Test Weight (lbs/bu)	Growth Habit
6	Vibrant	4113	44	85	37.3	9.6	65.1	2b
7	Radiant	3666	45	83	36.8	9.1	64.7	2b
8	Cowboy	3994	47	85	36.5	9.8	49.8	2b
9	Lumen (14451)	3764	47	87	38.1	9.9	66.5	2b
10	Gleam (14455)	3807	46	86	35.4	10.0	65.0	3a
11	18–453	3988	47	89	39.2	9.7	64.3	3a
12	18–272	4163	44	81	36.5	9.3	65.0	2b
13	18–274	3750	46	83	39.2	9.6	64.4	2b
14	18–283	3742	47	87	41.9	9.5	62.5	2b
15	18–376	3468	46	85	39.6	9.9	66.2	2b
16	18–291	3191	47	90	54.2	9.1	59.9	3a
17	SV6139GR	4286	45	85	35.9	9.7	64.3	2b
18	Windbreaker	4103	45	85	40.7	9.4	61.8	3a
19	Staybright	3438	45	88	37.4	9.5	64.8	2b/3b
20	ND Palomino	4101	43	86	39.3	9.1	64.2	3a
21	41767–15	3762	41	82	43.4	9.5	65.4	2b
22	30903–6	3839	43	79	32.9	9.5	64.2	3a
23	30993–27	3404	44	87	37.6	9.4	65.1	2b
24	33503–5	3933	46	88	39.6	9.4	62.9	2b
25	34628–5	3674	47	89	42.5	9.8	62.5	2b/3b
26	52646–14	3223	47	87	44.6	9.7	61.7	2b
27	43732–5	3552	47	92	41.5	9.8	62.9	2b
28	53676–3	3035	49	91	35.3	9.3	60.9	2b
29	EX1843-P	3917	44	85	34.7	9.4	61.9	2b
30	EX1844-P	4028	45	84	39.7	9.2	62.0	2b
31	EX1846-P	3546	45	82	36.9	9.3	61.7	2b
32	Croissant	4015	44	87	38.9	9.7	63.6	2b
33	DR Wood	3656	46	90	38.4	9.9	63.0	2b
34	Long's Peak	3454	45	86	39.2	9.2	62.7	2b
35	Centennial	3568	45	89	38.3	9.7	63.8	2b/3b
36	NE2-17-18	3904	44	87	47.3	9.3	62.9	2b/3b
37	NE2-17-20	3791	45	86	39.2	9.4	63.3	3a
38	NE2-17-37	3483	43	85	35.5	9.4	63.2	2b
39	NE2-17-38	3884	42	85	39.7	9.4	62.3	3a
40	NE2-17-40	3995	44	87	43.4	9.2	64.0	2b/3b
41	NE2-17-41	3855	44	87	42.2	9.3	60.1	3a
42	NE4-17-10	3667	43	82	39.8	9.3	60.3	2b
43	NE4-17-6	3946	42	83	43.0	9.2	62.6	2b
44	NE4-18-16	3401	43	84	43.2	9.6	63.6	2b
45	NE4-18-45	3504	45	86	42.0	9.2	61.1	3a
46	NE4-18-55	3745	45	90	49.5	9.9	62.3	2b
47	NE4-18-40	3490	45	89	39.7	9.1	61.0	3a
48	NE2-17-44	4018	42	88	41.6	9.2	60.9	3a
49	USDA-Rattler	3928	47	87	36.9	9.6	63.4	2b
50	PT16–9	3424	47	88	35.4	9.7	63.6	2b

Table 4. 2020 Pinto Variety Trial—Mitchell Ag Lab. (continued)

Ent (no)	ID	Yield (lbs/acre)	Flowering (days)	Maturity (days)	100-SeedWeight (gr)	Moisture (%)	Test Weight (lbs/bu)	Growth Habit
	GRAND MEAN	3741	45	86	39.5	9.5	62.9	
	LSD 5 %	551	1	2	2.1	0.5	5.8	
	CV %	7.5	1.2	1.3	2.7	2.8	4.7	

Table 5. 2020 Light Red kidney Variety Trial—Scottsbluff Ag Lab.

Ent (no)	ID	Yield (lbs/acre)	Flowering (days)	Maturity (days)	100-SeedWeight (gr)	Moisture (%)	Test Weight (lbs/bu)	Growth Habit
1	Closeau	1937	35	84	57.7	9.2	59.9	1
2	Pink Panther	2263	36	87	59.8	8.9	59.0	1
3	Red Zone	2507	42	92	53.3	9.0	58.1	1
4	Big Red	3226	35	84	57.6	8.7	60.6	1
5	Ronnie's Red	2687	40	91	62.3	8.8	59.6	1
6	Red Dawn (09363)	3316	36	79	59.7	8.8	60.3	1
7	15907	2579	42	92	53.9	8.8	57.2	1
8	15923	2261	36	84	62.0	9.0	58.9	1
9	161014	3005	40	89	57.6	8.9	59.7	1
10	161041	2704	42	91	55.3	8.9	58.6	1
11	CELRK	2949	34	80	58.6	9.0	60.6	1
12	Panhandle Red	2745	40	90	55.0	9.1	60.2	1
13	L4063262	2335	41	93	58.5	9.1	58.7	1
14	L1032326	3022	43	90	56.5	8.9	57.6	1
	GRAND MEAN	2681	39	88	57.7	8.9	59.2	
	LSD 5 %	350	3	3	2.3	0.3	1.0	
	CV %	6.5	3.4	1.6	2.0	1.5	0.8	

Table 6. 2020 Light Red Kidney Variety Trial—Mitchell Ag Lab.

Ent (no)	ID	Yield (lbs/acre)	Flowering (days)	Maturity (days)	100-SeedWeight (gr)	Moisture (%)	Test Weight (lbs/bu)	Growth Habit
1	Closeau	1968	37	84	60.6	9.2	60.5	1
2	Pink Panther	2519	38	86	58.8	9.2	59.9	1
3	Red Zone	2884	42	91	57.2	9.2	58.7	1
4	Big Red	3388	36	83	57.8	9.3	60.3	1
5	Ronnie's Red	2831	43	88	60.5	9.1	60.2	1
6	Red Dawn (09363)	3020	39	78	59.2	9.1	60.2	1
7	15907	2829	45	93	52.5	9.2	57.2	1
8	15923	2309	37	81	57.7	9.2	59.5	1
9	161014	2720	43	85	54.2	9.0	60.1	1
10	161041	3042	45	88	58.1	9.0	59.3	1
11	CELRK	2878	37	80	56.6	9.0	61.4	1
12	Panhandle Red	2579	41	86	55.7	9.4	60.5	1
	GRAND MEAN	2747	40	85	57.4	9.2	59.8	
	LSD 5 %	395	2	2	2.8	0.4	1.0	
	CV %	7.1	2.1	1.1	2.4	2.0	0.8	

Table 7. 2020 Dark Red Kidney Variety Trial—Scottsbluff Ag Lab.

Ent (no)	ID	Yield (lbs/acre)	Flowering (days)	Maturity (days)	100-SeedWeight (gr)	Moisture (%)	Test Weight (lbs/bu)	Growth Habit
1	Chaparral	3092	39	91	45.3	9.0	59.3	1
2	Epic (09430)	2268	39	91	57.8	8.7	59.9	1
3	Spire (09431)	2765	40	92	49.2	8.9	59.8	1
4	Rampart (09434)	2468	39	84	47.4	8.8	60.5	1
5	15978	2384	44	91	49.6	8.8	61.1	1
6	15981	2186	43	89	56.5	8.5	55.4	1
7	151011	3013	40	86	45.1	8.9	61.3	1
8	161156	2982	38	82	45.3	8.8	60.5	1
9	161164	2813	40	90	51.9	8.7	59.4	1
10	Montcalm	2416	41	92	52.8	8.8	59.2	1
11	Red Hawk	2786	37	83	52.1	8.7	59.2	1
	GRAND MEAN	2652	40	88	50.3	8.8	59.6	
	LSD 5 %	300	2	2	2.6	0.3	1.0	
	CV %	5.6	2.7	1.1	2.5	1.5	0.8	

Table 8. 2020 Dark Red Kidney Variety Trial—Mitchell Ag Lab.

Ent (no)	ID	Yield (lbs/acre)	Flowering (days)	Maturity (days)	100-SeedWeight (gr)	Moisture (%)	Test Weight (lbs/bu)	Growth Habit
1	Chaparral	3275	45	90	43.8	9.1	59.8	1
2	Epic (09430)	2162	44	88	56.3	9.0	59.7	1
3	Spire (09431)	3324	44	90	49.9	9.2	60.5	1
4	Rampart (09434)	2753	45	86	46.4	9.1	62.1	1
5	15978	2689	44	90	48.8	9.3	61.1	1
6	15981	2298	45	86	57.2	8.8	56.2	1
7	151011	2781	43	85	43.5	8.9	61.7	1
8	161156	3221	42	81	43.0	9.2	60.4	1
9	161164	2691	44	89	50.7	9.1	59.2	1
10	Montcalm	2832	44	90	54.3	8.8	59.4	1
11	Red Hawk	2678	43	84	47.2	8.9	58.7	1
	GRAND MEAN	2791	44	87	49.2	9.0	59.9	
	LSD 5 %	243	1	2	2.0	0.3	0.9	
	CV %	4.3	1.6	1.2	2.0	1.5	0.8	

Table 9. 2020 Black Variety Trial—Scottsbluff Ag Lab.

Ent (no)	ID	Yield (lbs/acre)	Flowering (days)	Maturity (days)	100-SeedWeight (gr)	Moisture (%)	Test Weight (lbs/bu)	Growth Habit
1	B13SR1–1	3028	46	88	19.3	8.5	64.9	2b
2	Eclipse	3513	48	90	18.6	8.3	65.2	2b
3	Black Bear	3136	47	97	18.3	8.6	65.6	2b
4	Black Tails (14497)	3099	48	91	18.9	8.4	65.6	2b
5	Spectre (14497)	3666	48	97	20.3	8.9	65.4	2b
6	BlackBeard (14506)	2916	47	95	21.2	8.3	64.9	2b
7	13496	3172	47	90	19.4	8.1	64.4	2b
8	13505	3340	48	91	18.7	8.5	64.5	2b
9	14500	3426	48	96	21.8	8.3	65.5	2b
10	Ace	3592	47	88	18.9	8.2	65.4	2b
11	NE14-18-3	3011	44	88	22.0	8.4	64.2	2b/3b
12	NE14-18-4	3650	44	87	24.6	8.6	63.2	2b/3b
13	GTS 1103	3303	52	99	19.3	8.5	66.5	2b
	GRAND MEAN	3296	47	92	20.1	8.4	65.0	
	LSD 5 %	439	1	4	1.0	0.2	0.6	
	CV %	6.6	1.5	2.0	2.5	1.4	0.5	

Table 10. 2020 Black Variety Trial—Mitchell Ag Lab.

Ent (no)	ID	Yield (lbs/acre)	Flowering (days)	Maturity (days)	100-SeedWeight (gr)	Moisture (%)	Test Weight (lbs/bu)	Growth Habit
1	B13SR1–1	3034	48	88	19.8	9.0	65.3	2b
2	Eclipse	3804	48	92	20.7	9.3	65.7	2b
10	Ace	3567	48	90	20.0	8.8	65.1	2b
11	NE14-18-3	2702	48	86	21.7	8.8	63.7	2b/3b
12	NE14-18-4	3280	46	85	25.6	9.0	62.6	2b/3b
13	GTS 1103	3572	53	97	20.7	9.6	65.7	2b
	GRAND MEAN	3326	48	90	21.4	9.1	64.7	
	LSD 5 %	369	0	2	0.9	1.1	0.9	
	CV %	5.3	0.3	1.3	2.0	5.9	0.7	

Table 11. 2020 Navy Variety Trial—Scottsbluff Ag Lab.

Ent (no)	ID	Yield (lbs/acre)	Flowering (days)	Maturity (days)	100-SeedWeight (gr)	Moisture (%)	Test Weight (lbs/bu)	Growth Habit
1	Apex	3099	44	93	22.8	9.2	65.8	3a
2	SV1893GH	2871	48	93	19.5	8.9	66.1	2b/3b
3	HMS Medalist	3131	46	93	17.2	9.5	65.2	2b/3b
4	Blizzard	3482	46	92	18.2	9.4	65.7	2b
5	HMS Bounty (12047)	3468	47	92	17.8	9.5	65.5	2a
6	Amada (13068)	3702	47	93	19.8	9.6	65.5	2b
7	15094	3686	47	93	20.1	9.4	66.2	2b/3b
8	15095	3201	48	95	20.1	9.6	65.7	3a
9	EX1702-N	3028	45	94	17.8	9.4	65.9	2b
10	EX1804-N	3705	45	88	19.1	9.4	65.5	2b
	GRAND MEAN	3337	46	92	19.2	9.4	65.7	
	LSD 5 %	535	1	2	0.8	0.3	0.7	
	CV %	7.9	1.1	0.8	1.9	1.3	0.6	

Table 12. 2020 Navy Variety Trial—Mitchell Ag Lab.

Ent (no)	ID	Yield (lbs/acre)	Flowering (days)	Maturity (days)	100-SeedWeight (gr)	Moisture (%)	Test Weight (lbs/bu)	Growth Habit
1	Apex	2407	45	90	21.6	9.2	64.6	2a
2	SV1893GH	2494	49	89	17.6	9.0	64.2	3a
3	HMS Medalist	3818	48	88	17.1	9.7	64.3	3a
9	EX1702-N	2587	48	87	16.6	9.7	64.4	2b
10	EX1804-N	3285	48	83	17.5	9.4	64.4	2b
	GRAND MEAN	2918	48	87	18.1	9.4	64.4	
	LSD 5 %	547	1	2	1.1	0.3	0.5	
	CV %	8.8	0.8	1.3	2.9	1.6	0.4	