

73rd Annual Report
National Cooperative Dry Bean
Nursery

2022

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

**Cooperative Investigation among California, Colorado,
Maryland, Michigan, Nebraska, North Dakota, Washington, and
Wyoming -State Experiment Stations and Agricultural Research
Centers- as part of the Regional W-4150 Multi-State Project**

and

McGill University, Canada

and

Agriculture Research Service – USDA

Call for 2023 Cooperative Dry Bean Nursery

Seed Submissions

It is time to request seed submission for the 2023 Cooperative Dry Bean Nurseries. I want to receive **the list of entries** by April 7, 2023, and the seed must be in Scottsbluff, NE, by **April 14, 2023**. All entries will be planted in replicated test plots across several United States and Canada locations. Data for seed yield, 100-seed weight, and several agronomic and marketing characteristics will be taken. They will also be included in several disease nurseries, including bean rust and common bacterial blight. 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 Mountains)
- 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 2003 as 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 will submit the seeds and participate in the field trial for 2023 CDBN. Should you have any questions or concerns about the submission or participant fees, don't hesitate to 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 - 2022

| Name | Location | Seed Submitted | Planting Seed | Locations No. |
|--|---------------------------------|-----------------------|----------------------|----------------------|
| | | | | |
| Mike Moore, Jim Heitholt | Powell, WY | | yes | 1 |
| Christine Diepenbrock, Antonia Palkovic | Davis, CA | | yes | 2 |
| Phil Miklas | Othello, WA | yes | yes | 3 |
| Juan M. Osorno, Makenson Maisonneuve | Hatton, ND | | yes | 4 |
| Carlos Urrea, Cody Kaarstad | Scottsbluff, NE | yes | yes | 5 |
| Francisco Gomez, Evan Wright | Frankenmuth and Entrican, MI | yes | yes | 6 |
| Valerio Hoyos-Villegas, Shamus H. McGuire | Quebec, Canada | | yes | 7 |
| Tim Porch, Giovanni Lorenzo | Juana Diaz, PR | | yes | 8 |
| Lucas Nebert, Jim Myers | Eugene, OR | yes | | 9 |
| Talo Pastor- Corrales | Beltsville, MD | | yes (rust test) | 10 |

Table 2. Contact information for 2022 Cooperative Dry Bean Nursery

| Loc | First Name | Last Name | Affiliation | E-Mail | Phone |
|------------|-------------------|---------------------|----------------------------------|--|---------------------------|
| CA | Christine | Diepenbrock | University of CA – Davis | chdiepenbrock@ucdavis.edu | |
| | Antonia | Palkovic | | antoniapalkovic@gmail.com | |
| CO | Barry | Ogg | | Barry.Ogg@Colostate.edu | |
| ID | John | Dean | Idaho Seed Bean Co. | isbco@filertel.com | 208-734-5221 |
| MD | Talo | Pastor- Corrales | USDA-ARS | talo.pastor-corrales@ars.usda.gov | 301-504-6600 |
| | Francisco | Gomez | Michigan State University | gomezfr1@msu.edu | 517-353-0120 |
| | Evan | Wright | | wright294@msu.edu | 517-355-2287 |
| ND | Juan | Osorno | North Dakota State University | juan.osorno@ndsu.edu | 701-231-8145 |
| | Martin | Hochhalter | Meridian Seeds | mhochhalter@meridianseeds.co | 701-532-3975 |
| NE | Cody | Kaarstad | University of Nebraska | evalentincruzado2@unl.edu | 308-632-1480 |
| | Carlos | Urrea | | 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 | | thsmith@uoguelph.ca | 519-824-4120 ext 8339 |
| OR | Lucas | Nebert | Oregon State University | nebertl@gmail.com | |
| | Jim | Myers | | myersja@hort.oregonstate.edu | |
| QC | Valerio | Hoyos- Villegas | McGill University | valerio.hoyos-villegas@mcgill.ca | 514-398-7856 |
| PR | Tim | Porch | USDA-ARS | timothy.porch@usda.gov | 787-238-8024 |
| | 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 2022 Cooperative Dry Bean Nursery Entries.

| ENT. | COOPERATOR | CODE | MARKET CLASS |
|-------------|-------------------|-------------|---------------------|
| 1 | Miklas | USDA Basin | PTO |
| 2 | Gomez/Wright | Charro | PTO |
| 3 | Urrea | NE2-21-41 | PTO |
| 4 | TVS | La Paz | PTO |
| 5 | TVS | Othello | PTO |
| 6 | Miklas | CR17-1-7-B2 | CRAN |
| 7 | Urrea | NE9-20-8 | CRAN |
| 8 | Urrea | NE9-20-7 | CRAN |
| 9 | TVS | Cal Early | LRK |
| 10 | Gomez/Wright | Adams | BLK |
| 11 | Urrea | NE14-20-6 | BLK |
| 12 | Urrea | NE14-20-8 | BLK |
| 13 | TVS | Eclipse | BLK |
| 14 | Hochhalter | OAC-Equinox | NAVY |
| 15 | Miklas | SR-16-2-6 | RED |
| 16 | Gomez/Wright | Eiger | GN |
| 17 | Urrea | NE1-21-9 | GN |
| 18 | Urrea | NE1-21-22 | GN |
| 19 | Urrea | NE1-21-34 | GN |
| 20 | Nebert | BRG-3 | Brown |

The 2022 CDBN

The 2022 CDBN comprised 16 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 the nursery operator requested otherwise).

Disease Nurseries

For rust screening, four hundred seeds (untreated) were supplied to Beltsville, MD.

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% of 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 verify when the 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 a 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 seeds 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).

A footnote is provided with associated details for other traits and scoring methods.

Table 4. 2022 CDBN Summary: Yield, 100-Seed Weight, Phenotypical, Canning Data, and Common Bacterial Blight across locations.

| Entry | Market Class | Yield‡ | Yield† | 100-seed weight | Days to Flowering | Days to Harvest Maturity | Canning Appearance‡ | Common Bacterial Blight# | Protein |
|-------------------|--------------|--------------------------------------|----------|-----------------|-------------------|--------------------------|---------------------|--------------------------|---------|
| | | lbs/acre | lbs/acre | g | days | days | (1-5) | (1-9) | % |
| 1 | Pinto | PT10-12-1, USDA BASIN | 2857 | 42 | 50 | 93 | 3 | 5.3 | 26 |
| 2 | Pinto | Eldorado/P11519, CHARRO | 2945 | 42 | 50 | 99 | 4.5 | 5.3 | 26 |
| 3 | Pinto | NE2-21-41 | 2178 | 42 | 43 | 89 | 2.7 | 5.7 | 25 |
| 4 | Pinto | PNE-6-94-75/Kodiak, LAPAZ | 3086 | 44 | 48 | 95 | 3.5 | 7.0 | 24 |
| 5 | Pinto | NW410//VICTOR/AURORA, OTHELLO | 2254 | 41 | 44 | 88 | 3.5 | 8.0 | 24 |
| 6 | Black | Zenith//Alpena*/B09197, ADAMS | 3163 | 23 | 48 | 101 | 2.6 | 6.0 | 23 |
| 7 | Black | NE14-20-6 | 2292 | 25 | 51 | 99 | 2.8 | 6.0 | 25 |
| 8 | Black | NE14-20-8 | 2194 | 21 | 50 | 96 | 4.2 | 5.7 | 22 |
| 9 | Black | ND9902621-2, ECLIPSE | 2262 | 21 | 47 | 94 | 3.4 | 7.0 | 24 |
| 10 | Navy | OAC Equinox | 2573 | 26 | 47 | 103 | 3.7 | 3.0 | 24 |
| 11 | Red | SR16-2-6 | 2434 | 37 | 50 | 92 | 3.8 | 7.0 | 24 |
| 12 | GN | Eldorado/G13467, EIGER | 3088 | 37 | 48 | 100 | 3.3 | 5.3 | 25 |
| 13 | GN | NE1-21-9 | 2488 | 48 | 48 | 93 | 3.2 | 6.7 | 25 |
| 14 | GN | NE1-21-22 | 2729 | 42 | 50 | 93 | 3.9 | 6.7 | 24 |
| 15 | GN | NE1-21-34 | 2390 | 45 | 49 | 93 | 3.9 | 5.7 | 23 |
| 16 | Brown | BRG-3 | 1285 | 19 | 46 | 91 | 3.2 | 7.0 | . |
| 17 | CRAN | CR17-1-7-B2 | 2352 | 68 | 45 | 100 | 2.5 | 4.3 | 26 |
| 18 | CRAN | NE9-20-8 | 1298 | 60 | 42 | 94 | 2.6 | 5.0 | 25 |
| 19 | CRAN | NE9-20-7 | 1548 | 63 | 43 | 94 | 2.7 | 6.3 | 26 |
| 20 | LRK | CELRK | 1465 | 57 | 43 | 89 | 2.9 | 7.3 | 25 |
| GRAND MEAN | | | 2334 | 40 | 47 | 95 | 3.3 | 6.0 | 24.5 |

† CA and Quebec data was excluded

‡ Canning data from Michigan: 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 = desirable.

1, 2, 3= Resistant; 4, 5, 6= Intermediate; 7, 8, 9= Susceptible

Table 5. 2022 CDBN. Summary for seed yield (lbs/acre) for individual locations

| Entry | Market Class | ID | CA | MI | NE | WA | ND | Quebec | Average [†] |
|-------|--------------|--------------------------------------|------|--------|------|------|------|--------|----------------------|
| 1 | Pinto | PT10-12-1, USDA BASIN | 2314 | 2418 | 2697 | 4492 | 1820 | 1441 | 2857 |
| 2 | Pinto | Eldorado/P11519, CHARRO | 1697 | 2666 | 2756 | 4597 | 1760 | 991 | 2945 |
| 3 | Pinto | NE2-21-41 | 2197 | 1425 | 2035 | 3404 | 1850 | 1029 | 2178 |
| 4 | Pinto | PNE-6-94-75/Kodiak, LAPAZ | 1936 | 2608 | 2788 | 5020 | 1930 | 1403 | 3086 |
| 5 | Pinto | NW410//VICTOR/AURORA, OTHELLO | 1718 | 1469 | 2394 | 3513 | 1640 | 892 | 2254 |
| 6 | Black | Zenith//Alpena*/B09197, ADAMS | 788 | 2906 | 2795 | 5101 | 1850 | 1691 | 3163 |
| 7 | Black | NE14-20-6 | 693 | 2534 | 2067 | 2978 | 1590 | 1105 | 2292 |
| 8 | Black | NE14-20-8 | 1353 | 1876 | 2161 | 3528 | 1210 | 1026 | 2194 |
| 9 | Black | ND9902621-2, ECLIPSE | 883 | 2257 | 1929 | 3424 | 1440 | 957 | 2262 |
| 10 | Navy | OAC Equinox | 1224 | 2157 | 2628 | 3528 | 1980 | 1029 | 2573 |
| 11 | Red | SR16-2-6 | 741 | 2276 | 2239 | 3863 | 1360 | 948 | 2434 |
| 12 | GN | Eldorado/G13467, EIGER | 1833 | 2531 | 2554 | 5007 | 2260 | 1572 | 3088 |
| 13 | GN | NE1-21-9 | 1729 | 1608 | 2716 | 3728 | 1900 | 1375 | 2488 |
| 14 | GN | NE1-21-22 | 2117 | 1700 | 2884 | 4443 | 1890 | 1143 | 2729 |
| 15 | GN | NE1-21-34 | 1376 | 1054 | 2855 | 4000 | 1650 | 1228 | 2390 |
| 16 | Brown | BRG-3 | 453 | 464 | 1544 | 2301 | 830 | 131 | 1285 |
| 17 | CRAN | CR17-1-7-B2 | 688 | 2734 | 2286 | 3269 | 1120 | 1448 | 2352 |
| 18 | CRAN | NE9-20-8 | 464 | 1556 | 1812 | 1222 | 600 | 802 | 1298 |
| 19 | CRAN | NE9-20-7 | 733 | 2046 | 1761 | 1905 | 480 | 719 | 1548 |
| 20 | LRK | CELRK | 1432 | 2237 | 1506 | 1866 | 250 | 791 | 1465 |
| | | GRAND MEAN | | 2026.1 | 2320 | 3560 | 1430 | 1081 | 2334 |
| | | LSD 0.05 | | 293 | 568 | 957 | 270 | 479 | |
| | | CV % | | 10.6 | 12.1 | 17 | 13.7 | 41.6 | |

† CA and Quebec data was excluded

Table 6. 2022 CDBN. Summary for the 100-seed weight (g) for individual locations.

| Market Class | | ID | MI | NE | ND | Quebec | WA | Average [†] |
|-------------------|-------|--------------------------------------|------|------|------|--------|------|----------------------|
| 1 | Pinto | PT10-12-1, USDA BASIN | 47.3 | 35.5 | 37.1 | 35.0 | 49.4 | 42.3 |
| 2 | Pinto | Eldorado/P11519, CHARRO | 45.1 | 38.2 | 36.7 | 38.0 | 47.5 | 41.8 |
| 3 | Pinto | NE2-21-41 | 47.6 | 32.1 | 41.9 | 39.0 | 48.2 | 42.4 |
| 4 | Pinto | PNE-6-94-75/Kodiak, LAPAZ | 47.2 | 35.9 | 41.1 | 39.0 | 50.3 | 43.6 |
| 5 | Pinto | NW410//VICTOR/AURORA, OTHELLO | 44.4 | 35.0 | 35.5 | 35.0 | 49.2 | 41.0 |
| 6 | Black | Zenith//Alpena*/B09197, ADAMS | 25.8 | 18.5 | 20.2 | 24.0 | 25.1 | 22.4 |
| 7 | Black | NE14-20-6 | 29.2 | 21.7 | 22.9 | 22.0 | 27.7 | 25.3 |
| 8 | Black | NE14-20-8 | 22.3 | 19.1 | 20.0 | 20.0 | 23.9 | 21.3 |
| 9 | Black | ND9902621-2, ECLIPSE | 22.3 | 18.5 | 21.2 | 23.0 | 23.8 | 21.4 |
| 10 | Navy | OAC Equinox | 29.1 | 21.4 | 24.3 | 24.0 | 28.3 | 25.8 |
| 11 | Red | SR16-2-6 | 38.6 | 31.4 | 34.9 | 33.0 | 42.5 | 36.9 |
| 12 | GN | Eldorado/G13467, EIGER | 41.1 | 31.4 | 35.9 | 35.0 | 40.5 | 37.2 |
| 13 | GN | NE1-21-9 | 52.8 | 39.0 | 42.7 | 42.0 | 56.3 | 47.7 |
| 14 | GN | NE1-21-22 | 45.9 | 34.2 | 41.0 | 35.0 | 47.3 | 42.1 |
| 15 | GN | NE1-21-34 | 45.1 | 42.3 | 43.3 | 36.0 | 49.8 | 45.1 |
| 16 | Brown | BRG-3 | 19.2 | 15.8 | 18.3 | 29.0 | 21.8 | 18.8 |
| 17 | CRAN | CR17-1-7-B2 | 76.2 | 51.3 | 69.9 | 51.0 | 76.3 | 68.4 |
| 18 | CRAN | NE9-20-8 | 72.0 | 43.3 | 58.2 | 52.0 | 65.7 | 59.8 |
| 19 | CRAN | NE9-20-7 | 65.8 | 53.0 | 63.8 | 54.0 | 67.9 | 62.6 |
| 20 | LRK | CELRK | 65.3 | 46.8 | 56.1 | 54.0 | 58.3 | 56.6 |
| GRAND MEAN | | | 44.1 | 33.2 | 38.9 | 36.5 | 45.0 | 40.3 |
| LSD 0.05 | | | 0.6 | 3.7 | 5.8 | 5.4 | 3.7 | |
| CV % | | | 1.1 | 5.5 | 10.9 | 30.1 | 5.0 | |

[†] Quebec data was excluded.

Table 7. 2022 CDBN for Days to flowering (days) and Days to Harvest Maturity (days) for individual locations.

| Entry | Market Class | ID | Days to Flowering | | | | Days to Harvest Maturity | | | | |
|-------|--------------|--------------------------------------|-------------------|------|------|---------|--------------------------|-----|-----|-----|---------|
| | | | CA | MI | NE | Average | MI | NE | ND | WA | Average |
| | | | days | | | | days | | | | |
| 1 | Pinto | PT10-12-1, USDA BASIN | 55 | 46.5 | 48 | 50 | 94 | 84 | 102 | 93 | 93 |
| 2 | Pinto | Eldorado/P11519, CHARRO | 53 | 50 | 48 | 50 | 100 | 89 | 105 | 101 | 99 |
| 3 | Pinto | NE2-21-41 | 49 | 38.5 | 41 | 43 | 91 | 82 | 88 | 96 | 89 |
| 4 | Pinto | PNE-6-94-75/Kodiak, LAPAZ | 50 | 46 | 48 | 48 | 100 | 84 | 98 | 98 | 95 |
| 5 | Pinto | NW410//VICTOR/AURORA, OTHELLO | 50 | 39.5 | 41 | 44 | 89 | 82 | 93 | 88 | 88 |
| 6 | Black | Zenith//Alpena*/B09197, ADAMS | 48 | 47 | 48 | 48 | 100 | 91 | 107 | 105 | 101 |
| 7 | Black | NE14-20-6 | 58 | 46 | 48 | 51 | 101 | 88 | 105 | 103 | 99 |
| 8 | Black | NE14-20-8 | 54 | 46.5 | 48 | 50 | 98 | 84 | 100 | 102 | 96 |
| 9 | Black | ND9902621-2, ECLIPSE | 47 | 46 | 48 | 47 | 93 | 86 | 99 | 98 | 94 |
| 10 | Navy | OAC Equinox | 50 | 44 | 48 | 47 | 103 | 88 | 114 | 106 | 103 |
| 11 | Red | SR16-2-6 | 55 | 45.5 | 48 | 50 | 95 | 84 | 100 | 89 | 92 |
| 12 | GN | Eldorado/G13467, EIGER | 50 | 46 | 48 | 48 | 102 | 91 | 107 | 100 | 100 |
| 13 | GN | NE1-21-9 | 52 | 45.5 | 48 | 48 | 96 | 84 | 93 | 100 | 93 |
| 14 | GN | NE1-21-22 | 56 | 45 | 48 | 50 | 100 | 83 | 92 | 98 | 93 |
| 15 | GN | NE1-21-34 | 56 | 44 | 48 | 49 | 95 | 84 | 95 | 99 | 93 |
| 16 | Brown | BRG-3 | 53 | 38 | 48 | 46 | 90 | 86 | 98 | 90 | 91 |
| 17 | CRAN | CR17-1-7-B2 | 49 | 37 | 48 | 45 | 103 | 92 | 103 | 100 | 100 |
| 18 | CRAN | NE9-20-8 | 50 | 36.5 | 40 | 42 | 100 | 89 | 94 | 94 | 94 |
| 19 | CRAN | NE9-20-7 | 52 | 36.5 | 40 | 43 | 100 | 89 | 94 | 92 | 94 |
| 20 | LRK | CELRK | 51 | 38 | 40 | 43 | 100 | 82 | 85 | 87 | 89 |
| | | GRAND MEAN | 52 | 43.1 | 46.1 | 47 | 97 | 86 | 98 | 97 | 95 |
| | | LSD 0.05 | | 1 | 0 | | 2 | 3 | 4 | 4 | |
| | | CV % | | 1.7 | 0 | | 1.1 | 1.7 | 3.0 | 3.0 | |

Table 8. 2022 CDBN. Miscellaneous Traits Data.

| Ent | Market Class | ID | MI | | | | MI | | | | NE | | | Quebec |
|-----|--------------|-------------------------------|---------|--------------|------|------|--------------------|-------------------------|--------------------|-------------|----------|--------------------|---------|--------|
| | | | Lodging | Plant height | | | Des. Score | Canning [‡] | | Test Weight | Moisture | CBB | Protein | |
| | | | (1-5) | cm | | | (1-7) [‡] | Appearance [‡] | Color [§] | lbs/bu | % | (1-9) [#] | % | |
| 1 | Pinto | PT10-12-1, USDA BASIN | 2.3 | 47.0 | 47.7 | 47.4 | 4.0 | 3.0 | | 58.7 | 10.6 | 5.3 | 26 | |
| 2 | Pinto | Eldorado/P11519, CHARRO | 2.0 | 53.7 | 51.3 | 52.5 | 5.3 | 4.5 | | 58.4 | 10.2 | 5.3 | 26 | |
| 3 | Pinto | NE2-21-41 | 2.7 | 34.7 | 39.3 | 37.0 | 1.7 | 2.7 | | 59.8 | 10.2 | 5.7 | 25 | |
| 4 | Pinto | PNE-6-94-75/Kodiak, LAPAZ | 1.7 | 45.3 | 45.3 | 45.3 | 4.3 | 3.5 | | 58.2 | 10.6 | 7.0 | 24 | |
| 5 | Pinto | NW410/VICTOR/AURORA, OHELLO | .com | 28.7 | 35.3 | 32.0 | 1.0 | 3.5 | | 59.0 | 10.0 | 8.0 | 24 | |
| 6 | Black | Zenith//Alpena*/B09197, ADAMS | 1.3 | 44.7 | 50.7 | 47.7 | 5.3 | 2.6 | 2.7 | 62.7 | 10.6 | 6.0 | 23 | |
| 7 | Black | NE14-20-6 | 2.3 | 41.0 | 43.7 | 42.4 | 3.7 | 2.8 | 3.8 | 60.4 | 10.7 | 6.0 | 25 | |
| 8 | Black | NE14-20-8 | 2.3 | 41.7 | 42.7 | 42.2 | 3.7 | 4.2 | 3.8 | 61.0 | 9.9 | 5.7 | 22 | |
| 9 | Black | ND9902621-2, ECLIPSE | 1.7 | 47.0 | 46.0 | 46.5 | 4.7 | 3.4 | 3.0 | 60.6 | 9.8 | 7.0 | 24 | |
| 10 | Navy | OAC Equinox | 2.0 | 40.3 | 48.7 | 44.5 | 3.3 | 3.7 | | 61.2 | 10.6 | 3.0 | 24 | |
| 11 | Red | SR16-2-6 | 2.0 | 41.7 | 44.0 | 42.8 | 3.7 | 3.8 | | 59.8 | 10.5 | 7.0 | 24 | |
| 12 | GN | Eldorado/G13467, EIGER | 2.0 | 46.3 | 53.7 | 50.0 | 5.3 | 3.3 | | 59.0 | 10.7 | 5.3 | 25 | |
| 13 | GN | NE1-21-9 | 3.0 | 42.3 | 46.0 | 44.2 | 2.7 | 3.2 | | 57.8 | 9.9 | 6.7 | 25 | |
| 14 | GN | NE1-21-22 | 2.7 | 42.0 | 39.3 | 40.7 | 3.0 | 3.9 | | 57.5 | 10.1 | 6.7 | 24 | |
| 15 | GN | NE1-21-34 | 2.7 | 43.7 | 45.3 | 44.5 | 2.7 | 3.9 | | 56.2 | 10.2 | 5.7 | 23 | |
| 16 | Brown | BRG-3 | 3.0 | 29.7 | 29.0 | 29.3 | 1.0 | 3.2 | | 60.9 | 9.9 | 7.0 | . | |
| 17 | CRAN | CR17-1-7-B2 | 3.0 | 33.0 | 33.7 | 33.4 | 4.0 | 2.5 | | 57.5 | 10.7 | 4.3 | 26 | |
| 18 | CRAN | NE9-20-8 | 1.0 | 27.5 | 33.0 | 30.3 | 3.5 | 2.6 | | 55.7 | 10.4 | 5.0 | 25 | |
| 19 | CRAN | NE9-20-7 | 1.0 | 38.0 | 32.7 | 35.4 | 4.0 | 2.7 | | 54.7 | 10.2 | 6.3 | 26 | |
| 20 | LRK | CELRK | 1.0 | 29.5 | 25.0 | 27.3 | 3.0 | 2.9 | | 55.4 | 9.8 | 7.3 | 25 | |
| | | GRAND MEAN | 2.2 | 39.9 | 41.0 | 40.4 | 3.5 | 3.3 | | 58.7 | 10.3 | 6.0 | 24.5 | |
| | | LSD 0.05 | 0.7 | 8.4 | 6.3 | | 0.7 | | | 1.9 | 0.5 | 1.1 | 1.5 | |
| | | CV % | 21.2 | 8.9 | 11.1 | | 13.7 | | | 1.6 | 2.5 | 1.3 | 5.9 | |

† Desire Score: 1 = worst, 7 or 10 = best.

‡ Canning data from Michigan: 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 = desirable.

§ Color rated independently only for black beans.*Color rated independently only for black beans.

1, 2, 3= Resistant; 4, 5, 6= Intermediate; 7, 8, 9= Susceptible

2022 CDBN Notes

2022 Dry Bean Performance Evaluation at Powell, WY

There will not be any data from Powell, WY this year. Our stand establishment was very poor.

CDBN trial planted at UC Davis, CA

We do not recommend use of lb/a yield estimates due to low stand, which further complicates the projection of small-plot yields (on a grams per plot basis) to a by-acre basis.

CDBN trial planted at Quebec, Canada

The trail was under a lot of stress from weeds.
