

## 2023 Nebraska Dry Bean Variety Trials

### Carlos A. Urrea, Dry Bean Breeding Specialist, and Cody Kaarstad, Dry Bean Technologist

In 2023, the PHREC Dry Bean Breeding program conducted twelve replicated field trials at two locations, the Scottsbluff Ag. Lab (Scotts80-Field-1) and the Mitchell Ag. Lab (Field K) to evaluate which dry bean entries (varieties/experimental lines) best suit western Nebraska. These trials have been ongoing for 42 years to service the Nebraska dry bean industry. Information about dry bean variety performance is available on the web at <http://cropwatch.unl.edu/varietytest-Drybeans/2023>.

#### Locations and Germplasm

Twelve replicated trials [two Great Northern (26 entries), two Pintos (41 entries), two Light Red Kidneys (LRK, 16 entries), two Blacks (13 entries), two Navies (14 entries), two Yellows (7 entries), and two Others (6 entries) were planted at the Scottsbluff and Mitchell Ag. Labs on June 7 and 14, respectively.

The 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). The soil at the Mitchell site (41°56.6' N, 103°41.9' W, 1240 m elevation) is a silt loam (Typic Ustorthents). The fertilizer target rate was 80# N and 65# P with residual and applied fertilizer.

#### Agronomic Management

##### *Scottsbluff Ag. Lab*

The field at the Scottsbluff Ag. Lab was disked on April 24, plowed on May 25, and sprayed/roller harrowed with Eptam @ 2.5 pts/acre and Sonalan @ 2 pts/acre on May 27.

The field at the Scottsbluff Ag. Lab had enough # of residual N and P in a 36" dept, so no additional N and P were applied.

The field at the Scottsbluff Ag. Lab was irrigated 7 times (6.55 inches) using sprinkler irrigation. It received an additional 9.52 inches of precipitation and hail on June 23.

##### *Mitchell Ag. Lab*

The field at the Mitchell Ag. Lab was disked on March 25, plowed on June 6, and sprayed/roller harrowed with Eptam @ 2.5 pts/acre and Sonalan @ 2 pts/acre on June 7.

The field at the Mitchell Ag. Lab received 40# N and 20# P.

The field at the Mitchell Ag. Lab was irrigated 7 times (14 inches) using furrow irrigation. It received an additional 9.52 inches of precipitation and hail on June 23 and September 10.

#### 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, 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 October 9 and 10 and October 19 and 20, 2023, 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); and plant height in inches. Pinto beans were exposed to UV light for 72 hours to verify the slow-darkening trait (yes = slow-darkening; no = regular pintos). Results are presented in Tables 1 to 14.

### **Statistical Analysis**

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

The GRAND MEAN (bottom of each table) refers to the average 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**

|           |   |
|-----------|---|
| Table 1.  | 2023 Great Northern Variety Trial - Scottsbluff Ag. Lab.  |
| Table 2.  | 2023 Great Northern Variety Trial - Mitchell Ag. Lab.   |
| Table 3.  | 2023 Pinto Variety Trial - Scottsbluff Ag. Lab.   |
| Table 4.  | 2023 Pinto Variety Trial - Mitchell Ag. Lab.  |
| Table 5.  | 2023 Black Variety Trial - Scottsbluff Ag. Lab.   |
| Table 6.  | 2023 Black Variety Trial - Mitchell Ag. Lab.  |
| Table 7.  | 2023 Light Red Kidney Variety Trial - Scottsbluff Ag. Lab.  |
| Table 8.  | 2023 Light Red Kidney Variety Trial - Mitchell Ag. Lab.   |
| Table 9.  | 2023 Navy Variety Trial - Scottsbluff Ag. Lab.  |
| Table 10. | 2023 Navy Variety Trial - Mitchell Ag. Lab.   |
| Table 11. | 2023 Others (Dark Red Kidney, White Kidney, and Cranberries) Variety Trial - Scottsbluff Ag. Lab. |

- Table 12. 2023 Others (Dark Red Kidney, White Kidney, and Cranberries) Variety Trial - Mitchell Ag. Lab.
- Table 13. 2023 Yellow Variety Trial - Scottsbluff Ag. Lab.
- Table 14. 2023 Yellow Variety Trial – Mitchell Ag. Lab.

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**Table 1. 2023 Great Northern Variety Trial -Scottsbluff Ag Lab.**

| Ent | PEDIGREE          | Yield Adj.<br>at 14% <sup>†</sup> | Yield at<br>14% | Flowering | Maturity | Plant<br>Height | Test<br>Weight | Moisture | 100-<br>SeedWeight | Growth<br>Habit <sup>‡</sup> |
|-----|-------------------|-----------------------------------|-----------------|-----------|----------|-----------------|----------------|----------|--------------------|------------------------------|
| no  |                   | lbs/acre                          | lbs/acre        | days      | days     | inches          | lbs/bu         | %        | gr                 |                              |
| 4   | Virgo (13172)     | 4019                              | 3706            | 46        | 97       | 22.4            | 60.9           | 11.9     | 37.0               | 3a                           |
| 20  | NE1-22-16         | 3757                              | 3287            | 47        | 97       | 23.1            | 61.9           | 11.5     | 39.6               | 2b/3                         |
| 8   | 18215             | 3680                              | 3216            | 47        | 95       | 23.1            | 61.9           | 11.7     | 35.8               | 2b                           |
| 16  | NE1-21-25         | 3595                              | 3122            | 46        | 94       | 22.8            | 62.2           | 11.2     | 36.3               | 2b                           |
| 25  | NE1-22-19         | 3590                              | 3024            | 47        | 96       | 22.2            | 60.7           | 11.4     | 39.0               | 2b                           |
| 12  | NE1-17-36         | 3557                              | 3088            | 47        | 95       | 24.3            | 61.3           | 11.7     | 40.1               | 2b                           |
| 22  | NE1-22-55         | 3519                              | 2955            | 46        | 97       | 22.9            | 63.8           | 11.7     | 35.9               | 2b                           |
| 7   | 17227             | 3468                              | 3196            | 46        | 94       | 21.4            | 60.6           | 11.8     | 37.4               | 2b                           |
| 3   | Andromeda (13151) | 3457                              | 3392            | 46        | 91       | 19.5            | 61.5           | 11.8     | 43.3               | 2b/3                         |
| 11  | White Pearl       | 3414                              | 3170            | 46        | 93       | 22.4            | 61.1           | 11.2     | 37.7               | 2b                           |
| 15  | NE1-21-24         | 3322                              | 3087            | 47        | 93       | 23.0            | 61.0           | 11.3     | 36.1               | 2b                           |
| 6   | 15215             | 3285                              | 3089            | 46        | 94       | 26.1            | 63.2           | 11.7     | 36.3               | 2b                           |
| 2   | Hydra             | 3242                              | 3052            | 46        | 92       | 13.5            | 63.1           | 11.8     | 42.9               | 3a                           |
| 23  | NE1-22-27         | 3177                              | 2831            | 47        | 96       | 21.7            | 60.9           | 11.4     | 37.2               | 2b                           |
| 14  | NE1-21-20         | 3157                              | 2848            | 46        | 91       | 22.8            | 59.2           | 11.2     | 43.4               | 2b                           |
| 10  | Panhandle Pride   | 3155                              | 2690            | 46        | 95       | 22.0            | 61.0           | 11.2     | 37.5               | 2b                           |
| 13  | NE1-21-1          | 3120                              | 2852            | 47        | 94       | 24.5            | 61.1           | 11.3     | 37.3               | 2b                           |
| 21  | NE1-22-5          | 3059                              | 2854            | 47        | 93       | 23.6            | 61.4           | 11.2     | 36.3               | 2b                           |
| 24  | NE1-22-14         | 3054                              | 2766            | 46        | 95       | 21.6            | 61.8           | 11.4     | 41.5               | 2b                           |
| 1   | ND Pegasus        | 3046                              | 2616            | 47        | 102      | 27.4            | 61.6           | 12.0     | 37.8               | 2b                           |
| 9   | Coyne             | 2979                              | 2825            | 45        | 92       | 18.9            | 61.7           | 11.7     | 36.1               | 3a                           |
| 5   | Lyra (14164)      | 2953                              | 2658            | 46        | 94       | 22.6            | 61.8           | 11.8     | 41.5               | 2b                           |
| 19  | NE1-21-42         | 2868                              | 2178            | 47        | 94       | 22.0            | 58.1           | 11.3     | 37.6               | 2b/3                         |
| 17  | NE1-21-34         | 2653                              | 2305            | 46        | 92       | 23.8            | 62.2           | 11.6     | 38.3               | 2b                           |
| 26  | Powderhorn        | 2614                              | 2324            | 46        | 92       | 21.9            | 59.6           | 11.2     | 35.8               | 2b                           |
| 18  | NE1-21-41         | 2391                              | 2075            | 46        | 93       | 21.7            | 61.2           | 11.1     | 37.4               | 2b                           |
|     | <b>GRAND MEAN</b> | 3236                              | 2893            | 46        | 94       | 22.4            | 61.3           | 11.5     | 38.3               |                              |
|     | <b>LSD 5 %</b>    | 489                               | 464             | 2         | 2        | 2.7             | 1.1            | 0.4      | 1.5                |                              |
|     | <b>CV %</b>       | 7.6                               | 8.1             | 1.9       | 1.3      | 6.0             | 0.9            | 1.5      | 2.0                |                              |

<sup>†</sup> Yield adjusted based on plot length (hail damage).

<sup>‡</sup> 2a, 2b= Indeterminate, bush habit, short and long guides, respectively; 3, 3a = Indeterminate, with weak prostrate stem, and long and short guides, respectively.

**Table 2. 2023 Great Northern Variety Trial - Mitchell Ag Lab.**

| Ent | PEDIGREE          | Yield at 14% | Flowering | Maturity | Plant Height | Test Weight | Moisture | 100-SeedWeight | Growth Habit <sup>†</sup> |
|-----|-------------------|--------------|-----------|----------|--------------|-------------|----------|----------------|---------------------------|
| no  |                   | lbs/acre     | days      | days     | inches       | lbs/bu      | %        | gr             |                           |
| 4   | Virgo (13172)     | 4369         | 45        | 96       | 22.7         | 60.0        | 12.0     | 36.9           | 3a                        |
| 20  | NE1-22-16         | 3961         | 44        | 98       | 18.8         | 60.6        | 11.8     | 38.2           | 2b                        |
| 11  | White Pearl       | 3961         | 45        | 96       | 22.1         | 61.4        | 11.4     | 35.6           | 2b/3                      |
| 12  | NE1-17-36         | 3956         | 46        | 100      | 23.0         | 60.5        | 12.3     | 39.1           | 2b                        |
| 10  | Panhandle Pride   | 3919         | 46        | 96       | 21.6         | 60.9        | 11.5     | 36.5           | 2b                        |
| 7   | 17227             | 3761         | 44        | 96       | 20.3         | 60.6        | 12.0     | 37.1           | 2b                        |
| 22  | NE1-22-55         | 3669         | 47        | 100      | 22.2         | 63.9        | 12.0     | 34.4           | 2b                        |
| 8   | 18215             | 3618         | 44        | 96       | 21.5         | 60.5        | 12.3     | 35.2           | 2b                        |
| 3   | Andromeda (13151) | 3613         | 43        | 90       | 17.7         | 61.1        | 12.2     | 43.4           | 2b/3                      |
| 23  | NE1-22-27         | 3611         | 46        | 97       | 22.0         | 60.3        | 11.5     | 35.6           | 2b                        |
| 6   | 15215             | 3565         | 45        | 98       | 24.0         | 62.9        | 12.0     | 34.7           | 2b                        |
| 21  | NE1-22-5          | 3488         | 44        | 93       | 21.4         | 61.4        | 11.3     | 34.8           | 2b                        |
| 13  | NE1-21-1          | 3487         | 46        | 97       | 21.1         | 61.1        | 11.5     | 35.6           | 2b                        |
| 15  | NE1-21-24         | 3480         | 46        | 99       | 21.9         | 60.1        | 11.6     | 36.2           | 2b                        |
| 14  | NE1-21-20         | 3430         | 45        | 96       | 18.9         | 59.3        | 11.4     | 42.5           | 2b/3                      |
| 24  | NE1-22-14         | 3415         | 43        | 96       | 21.6         | 62.1        | 11.9     | 41.3           | 2b                        |
| 2   | Hydra             | 3312         | 42        | 91       | 16.5         | 62.1        | 12.4     | 42.6           | 3a                        |
| 16  | NE1-21-25         | 3304         | 45        | 100      | 20.3         | 60.9        | 11.6     | 35.9           | 2b                        |
| 9   | Coyne             | 3300         | 43        | 90       | 15.2         | 62.9        | 11.9     | 36.0           | 2b                        |
| 25  | NE1-22-19         | 3261         | 46        | 99       | 21.3         | 60.9        | 11.5     | 37.3           | 2b                        |
| 1   | ND Pegasus        | 3138         | 45        | 98       | 24.3         | 61.3        | 11.9     | 33.7           | 2b                        |
| 5   | Lyra (14164)      | 3007         | 44        | 91       | 21.9         | 62.8        | 11.5     | 38.3           | 2b                        |
| 26  | Powderhorn        | 2872         | 44        | 90       | 22.9         | 59.2        | 11.1     | 33.0           | 2b                        |
| 19  | NE1-21-42         | 2868         | 46        | 94       | 17.9         | 58.6        | 11.4     | 37.9           | 2b                        |
| 18  | NE1-21-41         | 2665         | 45        | 90       | 20.7         | 60.9        | 11.1     | 33.4           | 2b                        |
| 17  | NE1-21-34         | 2579         | 45        | 94       | 23.5         | 62.2        | 11.6     | 37.8           | 2b                        |
|     | <b>GRAND MEAN</b> | 3447         | 45        | 95       | 21.0         | 61.1        | 11.7     | 37.0           |                           |
|     | <b>LSD 5 %</b>    | 624          | 2         | 5        | 2.2          | 1.0         | 0.4      | 1.9            |                           |
|     | <b>CV %</b>       | 9.1          | 2.0       | 2.5      | 5.3          | 0.8         | 1.8      | 2.5            |                           |

<sup>†</sup> 2a, 2b= Indeterminate, bush habit, short and long guides, respectively; 3, 3a = Indeterminate, with weak prostrate stem, and long and short guides, respectively.

**Table 3. 2023 Pinto Variety Trial -Scottsbluff Ag Lab.**

| Ent | PEDIGREE           | Yield Adj.<br>at 14% <sup>†</sup> | Yield at<br>14% | Flowering | Maturity | Plant<br>Height | Test<br>Weight | Moisture | 100-<br>SeedWeight | Growth<br>Habit <sup>‡</sup> |
|-----|--------------------|-----------------------------------|-----------------|-----------|----------|-----------------|----------------|----------|--------------------|------------------------------|
| no  |                    | lbs/acre                          | lbs/acre        | days      | days     | inches          | lbs/bu         | %        | gr                 |                              |
| 41  | NE2-22-35          | 3792                              | 3249            | 47        | 96       | 21.8            | 60.4           | 11.3     | 39.9               | 2b/3                         |
| 25  | Shine (17589)      | 3730                              | 3586            | 48        | 97       | 28.4            | 62.4           | 11.2     | 36.8               | 2b                           |
| 24  | Mystic (17454)     | 3719                              | 3497            | 47        | 94       | 24.8            | 63.9           | 12.2     | 38.3               | 2b                           |
| 14  | Monterrey          | 3659                              | 3489            | 48        | 93       | 26.8            | 62.9           | 11.6     | 35.3               | 2b                           |
| 19  | Gleam (14455)      | 3639                              | 3523            | 47        | 94       | 24.9            | 63.8           | 11.3     | 34.6               | 2b                           |
| 6   | EX2145-P           | 3636                              | 2992            | 47        | 96       | 25.3            | 62.5           | 11.5     | 35.6               | 2b                           |
| 18  | Cowboy             | 3568                              | 3336            | 47        | 88       | 26.2            | 62.5           | 11.4     | 36.8               | 2b                           |
| 22  | 22-222             | 3544                              | 3372            | 46        | 93       | 27.0            | 63.9           | 11.8     | 41.1               | 2b                           |
| 26  | Cancun (14411)     | 3524                              | 3014            | 48        | 94       | 28.4            | 60.8           | 11.3     | 42.2               | 2b                           |
| 7   | EX2148-P           | 3515                              | 2819            | 48        | 97       | 28.4            | 62.6           | 12.1     | 33.9               | 2b/3                         |
| 39  | NE2-22-38          | 3511                              | 3371            | 48        | 93       | 23.7            | 57.8           | 11.3     | 43.7               | 2b/3                         |
| 27  | USDA Rattler       | 3473                              | 3289            | 48        | 94       | 25.9            | 61.5           | 11.5     | 39.2               | 2b                           |
| 11  | ND Falcon          | 3426                              | 2815            | 49        | 97       | 28.1            | 59.5           | 11.4     | 35.5               | 2b                           |
| 2   | 33503-5            | 3420                              | 2609            | 49        | 100      | 22.9            | 60.3           | 12.7     | 41.5               | 3a                           |
| 21  | Santa Maria(13431) | 3378                              | 3101            | 47        | 88       | 26.9            | 61.9           | 11.5     | 40.5               | 2b                           |
| 1   | Bronco             | 3356                              | 3221            | 47        | 92       | 24.3            | 63.5           | 11.5     | 43.2               | 2b                           |
| 10  | ND Rodeo           | 3353                              | 2512            | 47        | 98       | 25.2            | 63.4           | 11.6     | 38.8               | 2b/3                         |
| 36  | NE2-22-36          | 3347                              | 3218            | 46        | 93       | 21.8            | 63.0           | 11.3     | 46.7               | 2b                           |
| 13  | La Paz             | 3314                              | 3228            | 48        | 94       | 26.2            | 62.5           | 11.7     | 36.0               | 2b                           |
| 40  | NE2-22-12          | 3309                              | 2978            | 47        | 97       | 21.1            | 60.9           | 12.0     | 43.2               | 2b/3                         |
| 16  | Vibrant            | 3284                              | 3175            | 46        | 91       | 24.5            | 61.8           | 11.3     | 35.0               | 2b                           |
| 15  | Torreon            | 3245                              | 3079            | 48        | 91       | 27.8            | 63.0           | 11.5     | 38.1               | 2b                           |
| 38  | NE2-22-18          | 3169                              | 3004            | 48        | 95       | 24.8            | 60.6           | 11.1     | 39.9               | 2b                           |
| 12  | SV6139GR           | 3167                              | 2930            | 47        | 92       | 22.4            | 62.0           | 11.4     | 36.9               | 2b                           |
| 23  | Rustler (16400)    | 3130                              | 2933            | 46        | 92       | 20.4            | 61.9           | 11.5     | 38.7               | 2b                           |
| 3   | 32330-14           | 3123                              | 2707            | 48        | 95       | 25.3            | 59.7           | 11.6     | 40.2               | 2b                           |
| 17  | Radiant            | 3119                              | 3033            | 46        | 91       | 24.2            | 62.0           | 11.1     | 35.0               | 2b                           |
| 32  | NE2-17-37          | 3102                              | 2667            | 46        | 95       | 23.4            | 60.0           | 11.5     | 37.1               | 2b                           |
| 37  | NE2-22-5           | 3082                              | 2829            | 47        | 96       | 23.7            | 60.9           | 11.8     | 36.7               | 2b/3                         |
| 34  | NE2-21-34          | 3050                              | 2862            | 47        | 94       | 22.7            | 60.7           | 11.4     | 37.2               | 2b                           |
| 29  | Wildcat            | 3045                              | 2868            | 46        | 95       | 22.0            | 59.7           | 11.4     | 36.6               | 2b/3                         |
| 9   | ND Palomino        | 3027                              | 2776            | 47        | 97       | 20.5            | 59.3           | 11.2     | 36.2               | 2b/3                         |
| 5   | EX2144-P           | 3023                              | 2506            | 48        | 96       | 24.4            | 62.0           | 11.9     | 35.8               | 2b                           |
| 30  | NE4-17-10          | 3002                              | 2536            | 47        | 96       | 21.6            | 58.6           | 11.5     | 42.2               | 2b                           |
| 35  | NE2-22-1           | 2999                              | 2686            | 48        | 93       | 18.1            | 57.2           | 10.8     | 42.5               | 3a                           |
| 28  | USDA Diamondback   | 2968                              | 2690            | 48        | 97       | 27.0            | 62.4           | 11.6     | 34.9               | 2b                           |
| 8   | EX2149-P           | 2964                              | 2871            | 48        | 91       | 24.3            | 62.3           | 11.3     | 31.5               | 2b                           |
| 33  | NE2-21-8           | 2880                              | 2803            | 45        | 88       | 22.8            | 60.5           | 11.0     | 40.8               | 2b                           |
| 31  | NE4-17-6           | 2830                              | 2493            | 46        | 94       | 20.1            | 59.2           | 11.2     | 46.0               | 2b                           |
| 20  | Gaucha (13396)     | 2554                              | 2431            | 46        | 87       | 20.9            | 62.8           | 10.9     | 33.7               | 2b                           |
| 4   | 52646-14           | 2120                              | 1831            | 48        | 93       | 21.2            | 58.9           | 11.7     | 44.1               | 2b                           |
|     | <b>GRAND MEAN</b>  | 3246                              | 2949            | 47        | 94       | 24.1            | 61.4           | 11.5     | 38.6               |                              |
|     | <b>LSD 5 %</b>     | 541                               | 477             | 1         | 3        | 2.5             | 0.9            | 0.6      | 1.9                |                              |
|     | <b>CV %</b>        | 8.4                               | 8.2             | 1.3       | 1.7      | 5.3             | 0.7            | 2.6      | 2.5                |                              |

<sup>†</sup> Yield adjusted based on plot length (hail damage).

<sup>‡</sup> 2a, 2b= Indeterminate, bush habit, short and long guides, respectively; 3, 3a = Indeterminate, with weak prostrate stem, and long and short guides, respectively.

**Table 4. 2023 Pinto Variety Trial - Mitchell Ag Lab.**

| Ent | PEDIGREE           | Yield at 14% | Flowering | Maturity | Plant Height | Test Weight | Moisture | 100-SeedWeight | Growth Habit <sup>†</sup> | Slow Darkening |
|-----|--------------------|--------------|-----------|----------|--------------|-------------|----------|----------------|---------------------------|----------------|
| no  |                    | lbs/acre     | days      | days     | inches       | lbs/bu      | %        | gr             |                           |                |
| 26  | 22-222             | 3739         | 45        | 95       | 25.9         | 62.9        | 12.4     | 40.1           | 2b                        | yes            |
| 35  | NE2-22-1           | 3600         | 46        | 93       | 19.0         | 57.4        | 11.4     | 40.1           | 3a                        | no             |
| 36  | NE2-22-36          | 3562         | 44        | 91       | 23.7         | 62.3        | 11.5     | 44.5           | 2b                        | yes            |
| 24  | Mystic (17454)     | 3536         | 46        | 93       | 25.2         | 62.2        | 11.8     | 36.5           | 2b                        | yes            |
| 25  | Shine (17589)      | 3526         | 47        | 94       | 28.1         | 61.3        | 11.8     | 36.4           | 2b                        | yes            |
| 39  | NE2-22-38          | 3512         | 47        | 93       | 23.4         | 59.0        | 11.4     | 41.5           | 3a                        | no             |
| 16  | Vibrant            | 3511         | 44        | 90       | 24.8         | 59.4        | 11.3     | 34.4           | 2b                        | yes            |
| 13  | La Paz             | 3341         | 47        | 92       | 26.3         | 63.0        | 11.5     | 32.0           | 2b                        | no             |
| 19  | Gleam (14455)      | 3305         | 46        | 93       | 23.8         | 64.1        | 11.4     | 31.8           | 2b                        | yes            |
| 14  | Monterrey          | 3295         | 47        | 91       | 24.4         | 62.9        | 11.5     | 32.6           | 2b                        | no             |
| 41  | NE2-22-35          | 3292         | 46        | 98       | 21.6         | 59.8        | 11.3     | 37.5           | 3a                        | no             |
| 1   | Bronco             | 3241         | 43        | 91       | 24.3         | 64.1        | 11.3     | 40.7           | 2b                        | yes            |
| 12  | SV6139GR           | 3219         | 45        | 90       | 23.3         | 60.3        | 11.4     | 34.2           | 2b                        | no             |
| 40  | NE2-22-12          | 3209         | 45        | 96       | 21.4         | 60.5        | 11.8     | 38.7           | 2b                        | yes            |
| 21  | Santa Maria(13431) | 3193         | 47        | 89       | 25.7         | 62.6        | 11.4     | 36.1           | 2b                        | no             |
| 37  | NE2-22-5           | 3149         | 46        | 96       | 23.7         | 62.2        | 11.7     | 35.9           | 2b                        | yes            |
| 38  | NE2-22-18          | 3102         | 45        | 91       | 25.0         | 60.7        | 11.0     | 36.2           | 2b                        | no             |
| 33  | NE2-21-8           | 3100         | 43        | 90       | 21.9         | 60.9        | 11.1     | 38.1           | 2b                        | yes            |
| 15  | Torreon            | 3068         | 46        | 91       | 26.0         | 63.3        | 11.4     | 33.9           | 2b                        | no             |
| 27  | USDA Rattler       | 3052         | 47        | 101      | 24.0         | 61.4        | 12.0     | 34.4           | 2b                        | no             |
| 18  | Cowboy             | 3040         | 46        | 90       | 27.6         | 62.4        | 11.4     | 33.8           | 2b                        | no             |
| 17  | Radiant            | 3030         | 44        | 90       | 24.3         | 60.9        | 11.3     | 34.2           | 2b                        | yes            |
| 2   | 33503-5            | 3025         | 47        | 100      | 23.3         | 61.0        | 11.7     | 39.1           | 3a                        | no             |
| 29  | Wildcat            | 2950         | 43        | 92       | 24.0         | 58.7        | 11.8     | 35.5           | 2b/3                      | yes            |
| 10  | ND Rodeo           | 2831         | 47        | 101      | 24.9         | 62.8        | 12.1     | 37.0           | 2b/3                      | yes            |
| 22  | Cancun (14411)     | 2780         | 47        | 92       | 27.8         | 60.3        | 11.7     | 37.9           | 2b                        | no             |
| 6   | EX2145-P           | 2764         | 46        | 92       | 23.8         | 62.3        | 11.7     | 29.7           | 2a                        | no             |
| 11  | ND Falcon          | 2748         | 49        | 98       | 26.3         | 59.5        | 11.3     | 34.3           | 2b                        | no             |
| 8   | EX2149-P           | 2728         | 45        | 89       | 23.3         | 62.4        | 11.5     | 27.3           | 2b                        | no             |
| 20  | Gaicho (13396)     | 2707         | 44        | 89       | 21.7         | 62.4        | 11.0     | 33.6           | 2b                        | no             |
| 31  | NE4-17-6           | 2664         | 44        | 91       | 21.8         | 59.8        | 11.2     | 40.3           | 2b                        | yes            |
| 32  | NE2-17-37          | 2655         | 45        | 93       | 21.6         | 59.0        | 11.7     | 35.9           | 2b                        | yes            |
| 28  | USDA Diamondback   | 2654         | 47        | 99       | 26.9         | 62.6        | 11.6     | 31.5           | 2b                        | yes            |
| 34  | NE2-21-34          | 2639         | 44        | 94       | 22.0         | 60.5        | 11.5     | 36.6           | 2b                        | yes            |
| 9   | ND Palomino        | 2638         | 44        | 91       | 21.2         | 58.2        | 11.6     | 34.7           | 2b/3                      | yes            |
| 5   | EX2144-P           | 2601         | 46        | 92       | 20.9         | 61.8        | 11.5     | 33.2           | 2b                        | no             |
| 3   | 32330-14           | 2587         | 46        | 92       | 27.4         | 59.1        | 11.3     | 36.6           | 2b                        | no             |
| 30  | NE4-17-10          | 2576         | 45        | 91       | 22.0         | 59.2        | 11.3     | 39.7           | 2b                        | yes            |
| 23  | Rustler (16400)    | 2566         | 45        | 91       | 23.0         | 60.4        | 11.5     | 36.7           | 2b                        | no             |
| 7   | EX2148-P           | 2490         | 47        | 96       | 24.6         | 62.8        | 12.1     | 29.4           | 2b                        | no             |
| 4   | 52646-14           | 1240         | 47        | 96       | 19.0         | 58.9        | 11.5     | 39.4           | 2b/3                      | no             |
|     | <b>GRAND MEAN</b>  | 2987         | 45        | 93       | 23.9         | 61.1        | 11.5     | 35.9           |                           |                |
|     | <b>LSD 5 %</b>     | 685          | 1         | 3        | 2.7          | 1.6         | 0.3      | 2.3            |                           |                |
|     | <b>CV %</b>        | 11.6         | 1.5       | 1.9      | 5.6          | 1.3         | 1.5      | 3.2            |                           |                |

<sup>†</sup> 2a, 2b= Indeterminate, bush habit, short and long guides, respectively; 3, 3a = Indeterminate, with weak prostrate stem, and long and short guides, respectively.

**Table 5. 2023 Black Variety Trial -Scottsbluff Ag Lab.**

| Ent | PEDIGREE           | Yield Adj. at 14% <sup>†</sup> | Yield at 14% | Flowering | Maturity | Plant Height | Test Weight | Moisture | 100-SeedWeight | Growth Habit <sup>‡</sup> |
|-----|--------------------|--------------------------------|--------------|-----------|----------|--------------|-------------|----------|----------------|---------------------------|
| no  |                    | lbs/acre                       | lbs/acre     | days      | days     | inches       | lbs/bu      | %        | gr             |                           |
| 5   | Eclipse            | 3760                           | 2459         | 54        | 101      | 24.0         | 64.5        | 10.6     | 20.0           | 2b                        |
| 6   | Black Tails(13489) | 3751                           | 2888         | 53        | 99       | 23.7         | 65.0        | 10.9     | 19.7           | 2a                        |
| 2   | B3036381           | 3615                           | 2635         | 55        | 110      | 22.5         | 64.6        | 11.8     | 20.4           | 2a/3                      |
| 4   | Ace                | 3402                           | 2805         | 53        | 97       | 23.5         | 64.3        | 10.6     | 19.8           | 2b                        |
| 9   | Nimbus (14500)     | 3329                           | 2288         | 54        | 109      | 22.7         | 65.1        | 11.0     | 21.9           | 2a                        |
| 8   | BlackBeard (14506) | 3088                           | 2517         | 53        | 102      | 26.8         | 63.8        | 11.0     | 21.4           | 2b                        |
| 1   | ND Twilight        | 3012                           | 2536         | 54        | 97       | 22.6         | 66.2        | 11.1     | 20.5           | 2a                        |
| 10  | NE14-18-6          | 2980                           | 2472         | 52        | 97       | 22.8         | 63.5        | 10.8     | 22.5           | 2b                        |
| 3   | B3033350           | 2882                           | 2295         | 53        | 98       | 20.8         | 65.0        | 10.4     | 19.7           | 2a                        |
| 7   | Spectre (14497)    | 2807                           | 1805         | 54        | 110      | 21.7         | 64.7        | 10.8     | 20.5           | 2b                        |
| 11  | NE14-18-8          | 2796                           | 2081         | 52        | 99       | 21.8         | 64.9        | 10.5     | 20.4           | 2a                        |
|     | <b>GRAND MEAN</b>  | 3220                           | 2435         | 53        | 102      | 23.0         | 64.7        | 10.9     | 20.6           |                           |
|     | <b>LSD 5 %</b>     | 832                            | 560          | 1         | 2        | 2.2          | 0.6         | 0.4      | 1.3            |                           |
|     | <b>CV %</b>        | 12.7                           | 11.3         | 1.1       | 0.8      | 4.7          | 0.4         | 2.0      | 3.0            |                           |

<sup>†</sup> Yield adjusted based on plot length (hail damage).

<sup>‡</sup> 2a, 2b= Indeterminate, bush habit, short and long guides, respectively; 3, 3a = Indeterminate, with weak prostrate stem, and long and short guides, respectively.

**Table 6. 2023 Black Variety Trial - Mitchell Ag Lab.**

| Ent | PEDIGREE           | Yield at 14% | Flowering | Maturity | Plant Height | Test Weight | Moisture | 100-SeedWeight | Growth Habit <sup>†</sup> |
|-----|--------------------|--------------|-----------|----------|--------------|-------------|----------|----------------|---------------------------|
| no  |                    | lbs/acre     | days      | days     | inches       | lbs/bu      | %        | gr             |                           |
| 3   | B3033350           | 3672         | 48        | 92       | 22.0         | 65.0        | 11.1     | 20.5           | 2b                        |
| 9   | Nimbus (14500)     | 3563         | 52        | 100      | 25.2         | 65.2        | 11.2     | 20.6           | 2a                        |
| 4   | Ace                | 3513         | 49        | 95       | 22.0         | 64.4        | 11.2     | 19.1           | 2a                        |
| 2   | B3036381           | 3255         | 50        | 103      | 24.5         | 64.9        | 11.7     | 19.1           | 2b                        |
| 6   | Black Tails(13489) | 3243         | 49        | 91       | 23.9         | 64.9        | 11.4     | 18.8           | 2b                        |
| 7   | Spectre (14497)    | 3172         | 52        | 103      | 23.9         | 65.1        | 11.6     | 19.9           | 2b                        |
| 1   | ND Twilight        | 3151         | 48        | 90       | 22.5         | 65.4        | 11.6     | 19.9           | 2b                        |
| 5   | Eclipse            | 3046         | 49        | 95       | 23.3         | 63.8        | 11.2     | 19.3           | 2b                        |
| 10  | NE14-18-6          | 3027         | 48        | 96       | 22.8         | 64.5        | 9.2      | 22.4           | 2b                        |
| 8   | BlackBeard (14506) | 2828         | 51        | 98       | 26.0         | 63.5        | 11.4     | 20.2           | 2a                        |
| 11  | NE14-18-8          | 2763         | 48        | 91       | 21.9         | 63.9        | 11.2     | 19.3           | 2b                        |
|     | <b>GRAND MEAN</b>  | 3203         | 49        | 96       | 23.5         | 64.6        | 11.2     | 19.9           |                           |
|     | <b>LSD 5 %</b>     | 628          | 1         | 5        | 1.9          | 1.8         | 2.4      | 1.4            |                           |
|     | <b>CV %</b>        | 9.6          | 1.2       | 2.7      | 4.0          | 1.3         | 10.8     | 3.4            |                           |

<sup>†</sup> 2a, 2b= Indeterminate, bush habit, short and long guides, respectively; 3, 3a = Indeterminate, with weak prostrate stem, and long and short guides, respectively.



**Table 7. 2023 Light Red Kidney Variety Trial -Scottsbluff Ag Lab.**

| Ent | PEDIGREE          | Yield Adj.<br>at 14% <sup>†</sup> | Yield at<br>14% | Flowering | Maturity | Plant<br>Height | Test<br>Weight | Moisture | 100-<br>SeedWeight | Growth<br>Habit <sup>‡</sup> |
|-----|-------------------|-----------------------------------|-----------------|-----------|----------|-----------------|----------------|----------|--------------------|------------------------------|
| no  |                   | lbs/acre                          | lbs/acre        | days      | days     | inches          | lbs/bu         | %        | gr                 |                              |
| 5   | Red Zone          | 2224                              | 1899            | 48        | 95       | 24.3            | 58.4           | 11.0     | 48.1               | 1                            |
| 1   | ND Rosie          | 2079                              | 1568            | 47        | 102      | 22.2            | 60.3           | 11.1     | 46.0               | 1                            |
| 2   | ND151660          | 1746                              | 459             | 42        | 100      | 18.1            | 59.4           | 11.0     | 49.0               | 1                            |
| 3   | L1032326          | 1728                              | 1500            | 48        | 95       | 21.3            | 56.9           | 10.8     | 47.4               | 1                            |
| 15  | Closeau           | 1667                              | 1118            | 43        | 96       | 19.0            | 58.0           | 11.1     | 53.9               | 1                            |
| 12  | 161042            | 1665                              | 1458            | 38        | 86       | 15.9            | 58.1           | 10.8     | 47.5               | 1                            |
| 6   | Ronnie's Red      | 1607                              | 1397            | 45        | 93       | 22.4            | 57.8           | 11.1     | 47.5               | 1                            |
| 13  | Pink Panther      | 1534                              | 1220            | 44        | 100      | 17.6            | 56.6           | 10.9     | 50.8               | 1                            |
| 7   | Red Dawn(09363)   | 1533                              | 1352            | 40        | 86       | 17.2            | 55.5           | 10.8     | 45.3               | 1                            |
| 8   | 15916             | 1478                              | 1171            | 43        | 93       | 17.4            | 58.6           | 10.7     | 44.4               | 1                            |
| 10  | 161082            | 1367                              | 1086            | 44        | 90       | 17.8            | 57.9           | 10.9     | 45.8               | 1                            |
| 16  | Panhandle Red     | 1236                              | 1003            | 44        | 96       | 19.1            | 57.8           | 11.0     | 46.9               | 1                            |
| 11  | 161041            | 1158                              | 996             | 49        | 98       | 19.3            | 57.1           | 10.5     | 44.3               | 1                            |
| 14  | CELRK             | 1134                              | 911             | 40        | 87       | 15.6            | 57.1           | 10.0     | 45.3               | 1                            |
| 4   | Big Red           | 1074                              | 888             | 39        | 94       | 17.0            | 58.2           | 10.9     | 46.2               | 1                            |
| 9   | 15923             | 826                               | 660             | 42        | 92       | 15.8            | 54.2           | 10.6     | 46.0               | 1                            |
|     | <b>GRAND MEAN</b> | 1503                              | 1168            | 43        | 94       | 18.8            | 57.6           | 10.8     | 47.1               | 1                            |
|     | <b>LSD 5 %</b>    | 610                               | 498             | 3         | 5        | 3.6             | 3.0            | 0.6      | 4.2                | 1                            |
|     | <b>CV %</b>       | 20.0                              | 21.0            | 3.7       | 2.9      | 9.4             | 2.6            | 2.7      | 4.4                | 1                            |

<sup>†</sup> Yield adjusted based on plot length (hail damage).

<sup>‡</sup> 1= Determinate, bush habit, short guides.

**Table 8. 2023 Light Red Kidney Variety Trial - Mitchell Ag Lab.**

| Ent | PEDIGREE          | Yield at<br>14% | Flowering | Maturity | Plant<br>Height | Test<br>Weight | Moisture | 100-<br>SeedWeight | Growth<br>Habit <sup>†</sup> |
|-----|-------------------|-----------------|-----------|----------|-----------------|----------------|----------|--------------------|------------------------------|
| no  |                   | lbs/acre        | days      | days     | inches          | lbs/bu         | %        | gr                 |                              |
| 1   | ND Rosie          | 2850            | 41        | 102      | 23.2            | 60.1           | 12.2     | 46.6               | 1                            |
| 3   | L1032326          | 2732            | 41        | 91       | 22.2            | 57.1           | 11.2     | 54.4               | 1                            |
| 10  | 161082            | 2638            | 41        | 90       | 20.2            | 59.8           | 11.0     | 53.7               | 1                            |
| 4   | Big Red           | 2625            | 41        | 92       | 20.8            | 58.2           | 11.4     | 54.6               | 1                            |
| 9   | 15923             | 2576            | 41        | 90       | 19.3            | 58.4           | 10.9     | 56.5               | 1                            |
| 5   | Red Zone          | 2571            | 41        | 97       | 24.1            | 58.6           | 11.9     | 49.2               | 1                            |
| 8   | 15916             | 2558            | 41        | 92       | 19.4            | 60.2           | 11.2     | 49.3               | 1                            |
| 6   | Ronnie's Red      | 2515            | 42        | 95       | 23.6            | 59.3           | 11.5     | 56.9               | 1                            |
| 12  | 161042            | 2425            | 41        | 89       | 18.7            | 60.2           | 10.5     | 60.1               | 1                            |
| 13  | Pink Panther      | 2379            | 41        | 93       | 21.8            | 57.5           | 11.5     | 55.6               | 1                            |
| 14  | CELRK             | 2243            | 41        | 89       | 18.4            | 59.4           | 10.8     | 53.0               | 1                            |
| 7   | Red Dawn(09363)   | 2136            | 41        | 88       | 18.9            | 58.8           | 10.7     | 55.1               | 1                            |
| 11  | 161041            | 1946            | 42        | 96       | 23.2            | 58.2           | 11.6     | 51.7               | 1                            |
| 16  | Panhandle Red     | 1810            | 41        | 93       | 20.8            | 58.6           | 11.2     | 50.8               | 1                            |
| 15  | Closeau           | 1386            | 41        | 97       | 21.7            | 58.8           | 11.4     | 54.0               | 1                            |
| 2   | ND151660          | 945             | 42        | 100      | 20.2            | 58.9           | 12.1     | 50.1               | 1                            |
|     | <b>GRAND MEAN</b> | 2271            | 41        | 93       | 21.0            | 58.9           | 11.3     | 53.2               |                              |
|     | <b>LSD 5 %</b>    | 647             | 1         | 5        | 2.0             | 1.6            | 0.7      | 3.2                |                              |
|     | <b>CV %</b>       | 14.2            | 1.7       | 2.5      | 4.8             | 1.3            | 3.2      | 3.0                |                              |

<sup>†</sup> 1= Determinate, bush habit, short guides.

**Table 9. 2023 Navy Variety Trial -Scottsbluff Ag Lab.**

| Ent | PEDIGREE            | Yield Adj. at 14% <sup>†</sup> | Yield at 14% | Flowering | Maturity | Plant Height | Test Weight | Moisture | 100-SeedWeight | Growth Habit <sup>‡</sup> |
|-----|---------------------|--------------------------------|--------------|-----------|----------|--------------|-------------|----------|----------------|---------------------------|
| no  |                     | lbs/acre                       | lbs/acre     | days      | days     | inches       | lbs/bu      | %        | gr             |                           |
| 13  | Liberty (15095)     | 3655                           | 2329         | 50        | 109      | 21.0         | 64.0        | 11.8     | 20.4           | 2b                        |
| 14  | Alpena              | 3645                           | 2871         | 51        | 108      | 24.0         | 65.2        | 11.7     | 18.9           | 3a                        |
| 1   | T9905               | 3538                           | 2852         | 48        | 103      | 21.5         | 63.4        | 11.8     | 22.5           | 2b                        |
| 11  | Armada (13068)      | 3446                           | 2836         | 49        | 106      | 21.9         | 63.9        | 11.8     | 21.8           | 2b                        |
| 7   | SV1893GH            | 3433                           | 2752         | 50        | 101      | 21.7         | 65.0        | 11.4     | 20.4           | 2b                        |
| 12  | HMS Victory (15094) | 3130                           | 2549         | 48        | 104      | 23.1         | 64.3        | 11.8     | 22.0           | 3a                        |
| 9   | Blizzard            | 3102                           | 2440         | 49        | 104      | 23.1         | 64.9        | 11.6     | 20.6           | 2b/3                      |
| 6   | ND Polar            | 3010                           | 2587         | 52        | 104      | 24.1         | 64.8        | 11.2     | 19.6           | 2b                        |
| 4   | EX1804-N            | 2846                           | 2374         | 48        | 99       | 20.4         | 64.1        | 11.2     | 20.0           | 2a                        |
| 2   | OAC Charm           | 2715                           | 2260         | 48        | 105      | 24.1         | 64.8        | 11.6     | 21.7           | 3a                        |
| 8   | HMS Medalist        | 2646                           | 2162         | 49        | 105      | 20.6         | 64.0        | 11.7     | 18.9           | 2b/3                      |
| 5   | EX2109-N            | 2414                           | 1991         | 48        | 104      | 20.7         | 63.8        | 11.6     | 21.3           | 2a                        |
| 3   | EX1803-N            | 2208                           | 1779         | 47        | 99       | 19.4         | 63.8        | 11.6     | 21.2           | 2a                        |
| 10  | HMS Bounty (12047)  | 1968                           | 1673         | 48        | 105      | 21.1         | 64.1        | 11.3     | 16.8           | 3a                        |
|     | <b>GRAND MEAN</b>   | 2983                           | 2390         | 49        | 104      | 21.9         | 64.3        | 11.6     | 20.4           |                           |
|     | <b>LSD 5 %</b>      | 817                            | 614          | 3         | 5        | 2.2          | 1.0         | 0.7      | 1.5            |                           |
|     | <b>CV %</b>         | 13.5                           | 12.7         | 2.9       | 2.2      | 5.0          | 0.7         | 3.0      | 3.7            |                           |

<sup>†</sup> Yield adjusted based on plot length (hail damage).

<sup>‡</sup> 2a, 2b= Indeterminate, bush habit, short and long guides, respectively; 3, 3a = Indeterminate, with weak prostrate stem, and long and short guides, respectively.

**Table 10. 2023 Navy Variety Trial - Mitchell Ag Lab.**

| Ent | PEDIGREE            | Yield at 14% | Flowering | Maturity | Plant Height | Test Weight | Moisture | 100-SeedWeight | Growth Habit <sup>†</sup> |
|-----|---------------------|--------------|-----------|----------|--------------|-------------|----------|----------------|---------------------------|
| no  |                     | lbs/acre     | days      | days     | inches       | lbs/bu      | %        | gr             |                           |
| 1   | T9905               | 3715         | 47        | 100      | 22.9         | 64.0        | 12.4     | 20.3           | 2b                        |
| 13  | Liberty (15095)     | 3434         | 48        | 101      | 22.0         | 63.9        | 12.4     | 18.6           | 2b                        |
| 4   | EX1804-N            | 3417         | 46        | 92       | 22.6         | 63.7        | 12.0     | 17.8           | 2b                        |
| 6   | ND Polar            | 3416         | 49        | 104      | 24.3         | 65.3        | 12.2     | 18.0           | 2b                        |
| 14  | Alpena              | 3333         | 48        | 100      | 24.2         | 64.2        | 12.5     | 17.2           | 2a                        |
| 12  | HMS Victory (15094) | 3273         | 48        | 98       | 23.1         | 63.7        | 12.3     | 18.9           | 2b                        |
| 7   | SV1893GH            | 3251         | 48        | 97       | 22.3         | 64.1        | 12.0     | 19.1           | 2b                        |
| 9   | Blizzard            | 3081         | 47        | 98       | 23.8         | 64.0        | 12.2     | 17.4           | 2b                        |
| 2   | OAC Charm           | 3021         | 44        | 102      | 23.8         | 64.5        | 12.2     | 21.0           | 2a                        |
| 8   | HMS Medalist        | 2939         | 46        | 95       | 23.4         | 63.9        | 11.9     | 16.7           | 2b                        |
| 11  | Armada (13068)      | 2812         | 48        | 98       | 23.6         | 63.0        | 12.0     | 18.1           | 2b                        |
| 3   | EX1803-N            | 2542         | 46        | 90       | 22.4         | 62.7        | 11.9     | 17.5           | 2b                        |
| 5   | EX2109-N            | 2449         | 47        | 96       | 22.4         | 63.7        | 12.1     | 18.3           | 2b                        |
| 10  | HMS Bounty (12047)  | 2130         | 48        | 102      | 24.5         | 64.0        | 11.8     | 16.3           | 2b                        |
|     | <b>GRAND MEAN</b>   | 3058         | 47        | 98       | 23.3         | 63.9        | 12.1     | 18.2           |                           |
|     | <b>LSD 5 %</b>      | 603          | 1         | 4        | 1.5          | 0.6         | 0.5      | 1.0            |                           |
|     | <b>CV %</b>         | 9.8          | 1.4       | 1.8      | 3.3          | 0.5         | 2.0      | 2.6            |                           |

<sup>†</sup> 2a, 2b= Indeterminate, bush habit, short and long guides, respectively; 3, 3a = Indeterminate, with weak prostrate stem, and long and short guides, respectively.

**Table 11. 2023 Others (Dark Red Kidney, White Kidney, and Cranberry) Variety Trial -Scottsbluff Ag Lab.**

| Ent | PEDIGREE          | Yield Adj. at 14% <sup>†</sup> | Yield at 14% | Flowering | Maturity | Plant Height | Test Weight | Moisture | 100-SeedWeight | Growth Habit <sup>‡</sup> |
|-----|-------------------|--------------------------------|--------------|-----------|----------|--------------|-------------|----------|----------------|---------------------------|
| no  |                   | lbs/acre                       | lbs/acre     | days      | days     | inches       | lbs/bu      | %        | gr             |                           |
| 1   | ND-Redbarn        | 1640                           | 1369         | 48        | 98       | 20.1         | 59.9        | 10.5     | 48.0           | 1                         |
| 2   | ND-Whitetail      | 2304                           | 2017         | 49        | 98       | 21.4         | 61.4        | 10.4     | 48.4           | 1                         |
| 6   | NE9-20-7          | 2275                           | 1611         | 39        | 86       | 17.6         | 52.1        | 10.8     | 54.8           | 1                         |
| 5   | NE9-18-3          | 2263                           | 1699         | 41        | 96       | 18.9         | 59.2        | 10.8     | 52.8           | 1                         |
| 4   | Amaranto          | 2197                           | 1538         | 42        | 86       | 15.2         | 57.5        | 10.7     | 48.5           | 1                         |
| 3   | Etna              | 1868                           | 1264         | 43        | 86       | 15.2         | 57.1        | 10.7     | 49.5           | 1                         |
|     | <b>GRAND MEAN</b> | 2091                           | 1583         | 43        | 92       | 18.1         | 57.9        | 10.6     | 50.3           | 1                         |
|     | <b>LSD 5 %</b>    | 645                            | 423          | 2         | 2        | 1.2          | 1.8         | 0.4      | 2.3            | 1                         |
|     | <b>CV %</b>       | 14.7                           | 12.7         | 2.2       | 0.8      | 3.1          | 1.5         | 1.8      | 2.2            | 1                         |

<sup>†</sup> Yield adjusted based on plot length (hail damage).

<sup>‡</sup> 1= Determinate, bush habit, short guides.

**Table 12. 2023 Others (Dark Red Kidney, White Kidney, and Cranberry) Variety Trial - Mitchell Ag Lab.**

| Ent | PEDIGREE          | Yield at 14% | Flowering | Maturity | Plant Height | Test Weight | Moisture | 100-SeedWeight | Growth Habit <sup>†</sup> |
|-----|-------------------|--------------|-----------|----------|--------------|-------------|----------|----------------|---------------------------|
| no  |                   | lbs/acre     | days      | days     | inches       | lbs/bu      | %        | gr             |                           |
| 1   | ND-Redbarn        | 2083         | 42        | 100      | 21.0         | 60.3        | 11.3     | 49.7           | 1                         |
| 2   | ND-Whitetail      | 2296         | 43        | 102      | 19.8         | 61.5        | 11.0     | 48.4           | 1                         |
| 3   | Etna              | 2118         | 41        | 90       | 18.1         | 59.9        | 11.2     | 56.4           | 1                         |
| 5   | NE9-18-3          | 1894         | 42        | 95       | 20.5         | 60.3        | 11.2     | 53.6           | 1                         |
| 4   | Amaranto          | 1878         | 42        | 89       | 17.3         | 59.6        | 11.3     | 55.8           | 1                         |
| 6   | NE9-20-7          | 595          | 41        | 92       | 15.9         | 57.6        | 11.2     | 57.0           | 1                         |
|     | <b>GRAND MEAN</b> | 1811         | 42        | 95       | 18.8         | 59.9        | 11.2     | 53.5           |                           |
|     | <b>LSD 5 %</b>    | 457          | 1         | 4        | 1.5          | 0.9         | 0.4      | 3.4            |                           |
|     | <b>CV %</b>       | 12           | 2         | 2        | 3.9          | 0.7         | 1.8      | 3.0            |                           |

<sup>†</sup> 1= Determinate, bush habit, short guides.

**Table 13. 2023 Yellow Variety Trial -Scottsbluff Ag Lab.**

| Ent | PEDIGREE          | Yield Adj.<br>at 14% <sup>†</sup> | Yield at<br>14% | Flowering | Maturity | Plant<br>Height | Test<br>Weight | Moisture | 100-<br>SeedWeight | Growth<br>Habit <sup>‡</sup> |
|-----|-------------------|-----------------------------------|-----------------|-----------|----------|-----------------|----------------|----------|--------------------|------------------------------|
| no  |                   | lbs/acre                          | lbs/acre        | days      | days     | inches          | lbs/bu         | %        | gr                 |                              |
| 2   | Patron            | 3106                              | 1754            | 43        | 108      | 16.0            | 67.8           | 10.9     | 37.6               | 1                            |
| 1   | Filler            | 2269                              | 1852            | 48        | 109      | 16.3            | 67.8           | 10.8     | 34.0               | 1                            |
| 3   | Filler            | 1611                              | 1338            | 39        | 95       | 14.9            | 68.4           | 9.8      | 37.5               | 1                            |
| 5   | NE17-20-43        | 1311                              | 603             | 48        | 110      | 14.8            | 68.4           | 10.3     | 38.5               | 1                            |
| 7   | Claim Jumper      | 1276                              | 614             | 49        | 110      | 14.3            | 64.6           | 11.7     | 41.8               | 1                            |
| 4   | Filler            | 1129                              | 609             | 48        | 110      | 14.7            | 66.6           | 11.1     | 39.1               | 1                            |
|     | <b>GRAND MEAN</b> | 1784                              | 1128            | 45        | 107      | 14.5            | 67.2           | 10.8     | 38.1               |                              |
|     | <b>LSD 5 %</b>    | 971                               | 494             | 3         | 9        | 2.6             | 1.6            | 0.9      | 2.8                |                              |
|     | <b>CV %</b>       | 25.0                              | 20.1            | 2.7       | 3.9      | 8.4             | 1.1            | 3.9      | 3.4                |                              |

<sup>†</sup> Yield adjusted based on plot length (hail damage).

<sup>‡</sup> 1= Determinate, bush habit, short guides.

**Table 14. 2023 Yellow Variety Trial - Mitchell Ag Lab.**

| Ent | PEDIGREE          | Yield at<br>14% | Flowering | Maturity | Plant<br>Height | Test<br>Weight | Moisture | 100-<br>SeedWeight | Growth<br>Habit <sup>†</sup> |
|-----|-------------------|-----------------|-----------|----------|-----------------|----------------|----------|--------------------|------------------------------|
| no  |                   | lbs/acre        | days      | days     | inches          | lbs/bu         | %        | gr                 |                              |
| 2   | Patron            | 2795            | 43        | 99       | 18.2            | 65.6           | 12.4     | 38.7               | 1                            |
| 3   | Filler            | 2371            | 42        | 90       | 17.5            | 66.3           | 11.6     | 43.6               | 1                            |
| 1   | Filler            | 2125            | 46        | 103      | 18.9            | 67.0           | 12.0     | 34.3               | 1                            |
| 7   | Claim Jumper      | 2095            | 47        | 101      | 18.3            | 66.8           | 12.0     | 36.3               | 1                            |
| 4   | Filler            | 1844            | 48        | 105      | 17.3            | 67.4           | 12.1     | 36.6               | 1                            |
| 5   | NE17-20-43        | 1617            | 43        | 103      | 18.0            | 66.9           | 11.8     | 36.5               | 1                            |
|     | <b>GRAND MEAN</b> | 2141            | 44        | 99       | 17.5            | 66.6           | 12.0     | 37.7               |                              |
|     | <b>LSD 5 %</b>    | 880             | 3         | 6        | 3.0             | 1.2            | 0.7      | 2.5                |                              |
|     | <b>CV %</b>       | 20              | 3         | 3        | 8.1             | 0.8            | 3.0      | 3.1                |                              |

<sup>†</sup> 1= Determinate, bush habit, short guides.