

2021 Dry Bean Performance Evaluation

(Report for the Wyoming Bean Commission; submitted March 2022)

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The University of Wyoming Seed Certification Service coordinates the dry bean variety performance evaluation at the Powell location in a continuous and on-going program. In cooperation with the National Cooperative Dry Bean Nursery, and with funding from the Wyoming Bean Commission, a wide range of germplasm is evaluated each year, assisting producers in selecting varieties best suited for Wyoming soils and climate.

Materials and Methods

The experiment was located at the University of Wyoming Research and Extension Center in Powell, Wyoming. The soil, a Garland clay loam, (fine, mixed, mesic: Typic Haplarid), was prepared by roller harrow and leveled in the spring. Chemical weed control consisted of a preplant incorporated chemical treatment of 2 pints of Sonalan and 1 pint of Outlook applied on May 6. The plots received 80 units of N, 130 units of P, 80 units of K, 70 units of sulfate, and 8 units of zinc per acre on May 6. The plots were planted on May 28 in three-row plots that were 5.5 feet wide by 20 feet long. IH 185 planter units with cone attachments were used, set on 22-inch row spacing. The experimental design was a randomized block with 4 replications. Cultivation occurred during the growing season when appropriate. Furrow irrigation was applied on May 14, June 11, July 4, July 13, July 21 and August 15. Visual estimates for days to 50 percent bloom (50 percent of plants at second bloom) and days to maturity (50 percent of the plants with one buckskin pod) were made. Subplots of one row by 10 feet were pulled by hand, and those plants were threshed with an Almaco stationary plot thresher. The seed was hand-picked to remove dirt clods and seed mixtures. Samples were then weighed for clean seed yield per plot and seeds per pound.

Results and Discussion

Stand establishment was good, with excellent soil and weather conditions. The growing season had no days over 100 degrees, but was consistently in the mid to upper 90's, with warm nights, leading to the earliest trial harvest in the last 20 years. Flowering, maturity, seed size, and yield data are presented in Table 1 on page 2.

Acknowledgements

This nursery was possible only with significant assistance of the Powell R & E Center assistant farm managers Brad May and Keith Schaefer.

Table 1. Powell R&E Center Cooperative Dry Bean Nursery Data

Name	Market Class	Bloom Days after Planting	Buckskin Days after Planting	Seeds per Pound	Yield lbs/A
USDA-Rattler	Pinto	51	89	1095	3082
PT16-9	Pinto	51	87	1140	2879
PT10-12-1	Pinto	51	87	1276	2814
PT9-5-6	Pinto	54	91	1274	3907
Othello	Pinto	47	73	1271	3472
NE2-20-3	Pinto	48	80	1176	3256
NE2-20-12	Pinto	47	80	1209	3231
NE2-20-14	Pinto	47	79	1209	3024
GN16-7-3 ⁽¹⁾	GN	50	89	1193	3163
NE1-20-19 ⁽¹⁾	GN	49	86	1271	2659
NE1-20-21 ⁽¹⁾	GN	48	86	1142	2942
Eclipse	Black	54	89	2249	3175
PNE-6-94-75	Pinto	56	91	1283	3400
CELRK	LRK	47	75	949	2434
Adams	Black	55	93	2245	4089
Centennial	Pinto	50	83	1221	2897
Croissant	Pinto	51	81	1337	2990
D R Wood	Pinto	50	87	1266	3108
Longs Peak	Pinto	49	81	1287	2629
Max	Pinto	48	71	1183	2769
	Mean	50	84	1314	3096
	LSD	2	3	72	313
	CV	2.5	2.8	3.9	15.9

GN - Great Northern

LRK - Light Red Kidney

⁽¹⁾These lines had highly variable seed size and shape, and may have been a market class mixture. With no other white bean market classes in the trial, it is likely a seed stock issue.