

## **2009 Dry Bean Performance Evaluation**

Mike Moore, Wyoming Seed Certification Service; Mike Killen, Powell Research and Extension Center, Randy Violet, Powell Research and Extension Center

In 2008, Wyoming ranked eighth nationally in dry bean (*Phaseolus vulgaris* L.) production, and third in the nation in the production of pinto beans. In the same year, Wyoming growers produced 705,000 hundred-weight of pinto beans on 30,500 harvested acres, averaging 21.3 hundred-weight per acre.

The University of Wyoming Seed Certification Service coordinates the dry bean variety performance evaluation at this location in a continuous and on-going program. In cooperation with the National Cooperative Dry Bean Nursery, a wide range of germplasm is evaluated each year, including promising new lines and newly released varieties, assisting producers in selecting varieties best suited for Wyoming soils and climate. Public and private (proprietary) varieties are tested.

### **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 Sonalan and 14 ounces Outlook, which was applied on April 24. The plots received 60 units of N, 50 units of P, and 5 units of Zn April 24. The plots were planted on May 20<sup>th</sup> in three row plots that were 5.5 feet wide by 20 feet long. IH 185 planter units with cone attachments were used, set on 22-inch row spacing. The experimental design was a randomized block with 4 replications. Cultivation controlled weed escapes during the growing season. Furrow irrigation was applied on May 7<sup>th</sup> (preplant), July 6<sup>th</sup>, July 17<sup>th</sup>, July 24<sup>th</sup>, August 3<sup>rd</sup>, August 13<sup>th</sup>, and August 25<sup>st</sup>. Visual estimates for days to 50 percent bloom (50 percent of plants at second bloom) and days to maturity (50 percent of the plants with one buckskin pod) were made. Subplots of one row by 10 feet were pulled by hand, and plots were threshed with an Almaco stationary small plot thresher. The seed was then hand screened over a  $10/64 \times 3/4$  inch slotted screen and 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 slow and variable due to cold soil temperatures and wet weather at planting. It was followed by the second coolest summer on record, with higher humidity and frequent rain showers further impacting plant development and maturity. September was warm and dry, and conditions during that month essentially saved the crop by allowing most entries to mature prior to a killing frost, although some frost-damaged beans were found in almost all the samples. Yields across entries averaged 3,305 lbs. per acre, and ranged from 1,852 pounds per acre for 'OAC Dublin' navy bean to 4,393 pounds per acre for 'Lariat' pinto bean.

### **Acknowledgements**

This nursery is possible only with significant assistance from the staff at the Powell Research and Extension Center. The R & E Center staff manages the plots, takes growing season notes, and harvests the plots, and their efforts are greatly appreciated.

Table 1. Agronomic Data, 2009 Cooperative Dry Bean Nursery, Powell, Wyoming

<b>Name</b>	<b>Market class</b>	<b>Yield lbs./A</b>	<b>Seeds per pound</b>	<b>50% Bloom days after planting</b>	<b>Pod Maturity days after planting</b>
T39	black	2329	2249	72	115
Shania	black	3191	2298	73	116
Zorro	black	3420	2038	72	116
Eclipse	black	3661	2302	72	115
OAC Dublin	navy	1852	2402	69	116
Avalanche	navy	2996	2208	68	112
Lightning	navy	3131	2094	68	116
Fuji	otebo	2269	1537	64	115
ISB 1218	pinto	2444	1435	78	115
Jackpot	pinto	2624	1332	75	108
Sequoia	pinto	3324	1275	67	107
IP08-2	pinto	3501	1369	68	114
Croissant	pinto	3548	1244	73	114
Stampede	pinto	3604	1224	68	112
Santa Fe	pinto	3630	1049	68	108
ND307	pinto	3956	1145	68	115
Max	pinto	3956	1009	66	108
Othello	pinto	4118	1153	64	107
CO 33875	pinto	4156	1113	68	112
Lariat	pinto	4393	1085	69	115
Mean		3305	1578	69	113
CV		12.5	4.5	4.4	1.9
LSD		585	101	4	3