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WYO 1966 -- A NEW PINTO BEAN

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WYO 166 -- A NEW PINTO BEAN

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A new interspecific hybrid pinto bean, Wyo 166, developed from a cross made in 1952 (2), was released by the University of Wyoming in 1965. The breeding program sought to obtain resistance to *Fusarium* root rot, a widespread bean disease. Seed was produced from 21 of 117 crossing attempts, 2 of which entered into the development of Wyo 166.

Annual production and value of dry edible beans in Wyoming from 1954 through 1961 show average yearly planting in excess of 60,000 acres with a gross yearly income in excess of 5½ million dollars (1). The largest acreages are in irrigated areas of Park, Goshen, Big Horn, Washakie, Fremont and Platte counties. Laramie, Converse and Natrona counties are also bean producing areas.



Wyo 166

PEDIGREE OF WYO 166

Phaseolus vulgaris L., variety Golden Pinto, which is well adapted to Wyoming growing conditions, was crossed with *Phaseolus coccineus* L., variety White Runner, an ornamental garden bean. White Runner was selected because of its resistance to *Fusarium* root rot. The F₁ was then back-crossed to the pinto parent, and Wyo 166 was selected from the progeny.

BREEDING BEHAVIOR

The F₁ generation from the original crosses were male-sterile and red-flowered. By back-crossing to the Pinto as the pollen parent, line continuation was possible. Progeny from the back-cross were approximately one-half red-flowered and one-half white-flowered. Seed from the white-flowered plants produced half red and half white-flowered progeny (2). Many seed colors were produced in the early generations including all white and all black; however, selection 166 produced all pinto-colored seed; blossoms were all white-flowered from the third through the sixth generations. In the seventh, eighth and ninth generations an occasional variegated black seed was produced, and in one instance red-flowered plants were noted. The seed released in 1965 is the tenth generation from the original cross.

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DESCRIPTION AND YIELD RESULTS

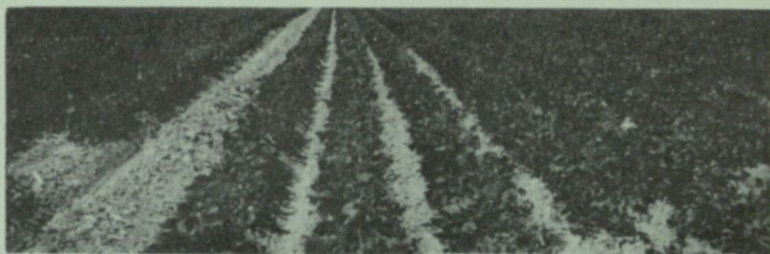
Wyo 166, a semi-vining, robust plant matures in 94 to 99 days, about 3 days later than the Pinto UI (University of Idaho)-111. It has a more extensive root system and is more viney than UI-111. The more extensive root system may render it better adapted for growing on coarse-textured soils. Wyo 166 recovered more rapidly than UI-111 after a severe hail July 9, 1963, at the Powell Substation. Wyo 166 produced 27 sacks per acre and UI-111 produced 20 sacks.

Seed of Wyo 166 is slightly larger than that of UI-111. In trials at Powell, Wyo 166 seed averaged 76 per ounce, UI-111 averaged 83. Disease studies indicate Wyo 166 is not resistant to Fusarium root-rot. Virus disease resistance has not been determined, although common mosaic symptoms have been noted. UI-111 is the present standard pinto variety of the region and is compared with Wyo 166 in regional tests (Table 1) and local tests (Table 2).

TABLE 1. YIELD COMPARISONS OF WYO 166 AND OF UI-111 AT 11 CO-OPERATIVE DRY-BEAN NURSERIES*, 1963, AND 1964, IN POUNDS PER ACRE.

| Variety | Kimberly, Ida. | Tribune, Kan. | Corvallis, Mont. (one year) | Huntley, Mont. (one year) | Sidney, Mont. | Scottsbluff, Nebr. |
|---------|------------------|------------------------------|--------------------------------|------------------------------|------------------|----------------------------------|
| Wyo 166 | 3225 | 3225 | 1742 | 2041 | 2149 | 2041 |
| UI-111 | 3245 | 2800 | 3005 | 1978 | 1791 | 1934 |
| | Deming, New Mex. | Prosser, Wash. (one year) | Othello, Wash. (one year) | Powell, Wyo. | Torrington, Wyo. | Mean yield/A 18 station years |
| Wyo 166 | 2283 | 3026 | 1746 | 2988 | 2630 | 2535 |
| UI-111 | 2278 | 3213 | 1752 | 3001 | 2378 | 2489 |

*The Cooperative Dry-Bean Nursery reports have been compiled annually by Marshall J. LaBaron, associate agronomist and superintendent of the Twin Falls Experiment Station, University of Idaho.



Breeder seed plot

TABLE 2. YIELD IN POUNDS PER ACRE OF WYO 166 AND OF UI-111 AT POWELL AND TORRINGTON, WYO. AND AT SIDNEY AND HUNTLEY, MONT.

| | Powell (5)* lbs./A | Torrington (3) lbs./A | Sidney (2) lbs./A | Huntley (1) lbs./A | Ave. Yield four sta. |
|---------|-----------------------|--------------------------|----------------------|-----------------------|-------------------------|
| Wyo 166 | 3406 | 2197 | 2149 | 2041 | 2724 |
| UI-111 | 3466 | 1991 | 1791 | 1978 | 2624 |

*The figure in parenthesis indicated the number of years varieties were tested at each location.

Because of an occasional off-color seed, Wyo 166 will be certified on a limited-generation basis. One generation each of Breeder's Foundation, Registered, and Certified will be recognized. Certified seed can be produced only from

Foundation or Registered seed. Certified seed cannot be used to produce certified seed. Seed not eligible for certification will not be recognized as Wyo 166 by releasing station.

Acknowledgment is made to Charles W. McAnelly, associate professor of plant pathology and horticulture; Robert H. Sackett, manager of Seed Certification Service, and to Leon H. Paules, head of division of agricultural substation, for their aid in study and release of this variety.

REFERENCES

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