Registration of Crop Cultivars

REGISTRATION OF BONANZA BARLEY
(Reg. No. 173)

R. I. Wolfe, K. W. Campbell, and W. H. Johnston

'BONANZA' barley (Hordeum vulgare L.), 8 CI 14003 (CN 55, BT 308, Br. 6145-29-1), was developed at the Agriculture Canada Res. Stn., Brandon, Manitoba, which is part of the Eastern Prairie Barley Group.

The pedigree of Bonanza is 'Vantage'/Jet'/Vantmore'/3/2*Parkland'/4/'Conquest'. The first cross in the series was made in 1949, the final one in 1961. The pedigree system of selection was used throughout. Preliminary and regional trials were carried out during the period 1964 to 1968. In 1966, Bonanza was entered in the Western Cooperative Barley Test, where it has remained, through 1980, as a check cultivar. Bonanza was licensed for sale in Canada in 1970, No. 1210, and released to seed growers in the same year.

Bonanza is a six-rowed smooth-awned spring barley of the Manchurian type, eligible for malting grades in Canada and the United States. It is similar to Conquest in malting quality with slightly higher extract and slightly less enzymatic activity.

Bonanza has good resistance to Puccinia graminis f. sp. tritici Eriks. and E. Henn. It carries Jet (CI 967) resistance to Ustilago nuda (Jens.) Rostr., but is susceptible to collections made in Canada since 1972. It is moderately susceptible to Ustilago hordei (Pers.) Lagerh. and Ustilago niga Tapke, has some field resistance to Pyrenophora teres (Pied.) Drechs. and Cochliobolus sativus Ito and Kuribay, and is susceptible to Rhynchosporium secalis (Oud.) J. J. Davis, Cochliobolus sativus Ito and Kuribay, and is susceptible to Helminthosporium sativum H. J. Eton, and Septoria passerinii Sacc. It is moderately to highly resistant to common root rot (caused by Helminthosporium spp.) as evidenced by readings taken of subrown internode staining.

Bonanza is adapted to the park belt area of western Canada where it has outyielded Conquest by 5 to 10%, and particularly in the eastern portion, has compared very favorably in yield with the top feed barleys. In Manitoba it outyielded the recommended feed cultivars until 1976. Wheat Pool estimates of Bonanza's share of the barley hectarage in western Canada increased each year from its release until 1978 when it reached a high of 27.4%. In many crop districts it has attained 40% or more of the hectarage. Some Bonanza has been grown in the United States, chiefly in North Dakota, where in 1977 it occupied an estimated 7% of the barley area.

Bonanza is mid-season in maturity, being 2 days later than Conquest and 7 to 10 cm shorter. It is similar to Conquest in most other agronomic characteristics, being slightly weaker strawed, slightly heavier in test weight, and slightly smaller in seed size.

The principle spike and grain characteristics are as follows: Spike - Six-rowed, mid-long, mid-lax to lax, base of spike emerges 5 to 15 cm, erect to semi-erect (more erect than Conquest), lemma awn long and semi-smooth, glume awn 4-5 times band, and rachis edges with few fine short hairs. Grain - Kernels hulled, mid-size, showing of lemma, aleurone blue, rachilla with no lateral veins with several fine to medium baring a depression tending toward a crease, similar to Conquest.

Breeder seed of Bonanza is being maintained by the Western Crop Improvement Assoc., Agriculture Canada Res. Stn., Box 440, Regina, Saskatchewan S4P 3A2, Canada.

REGISTRATION OF NAVAJO PINTO BEAN
(Reg. No. 21)

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'NAVOJO' pinto bean (Phaseolus vulgaris L.) was developed by the New Mexico Agric. Exp. Stn. from a cross between USDA 2207, the female parent, has multiple disease resistance including to some races of rust (caused by Ustilago spp. on Phaseolus vulgaris var. tepica Arth.). It was developed by the New Mexico Agric. Exp. Stn. and the USDA. NM 56-778, is a high yielding, rust resistant selection from the USDA, NM 56-778.

Field trials were conducted for 9 years at the New Mexico Agric. Exp. Stn., Farmington, N.M. Navaajo yielded an average of 520 pounds of beans than UI 114 during the 8 years when they were included in the tests. Navajo also produced more beans than UI 114 during 3 of the 4 years they were compared. Navaajo is a highly desirable cultivar 'UI 111' an average of 15% over 7 years of testing. Depending on the environment, the growth habit of Navajo ranged from viny to semi-erect. Navaajo was similar to or earlier in maturity than the relatively early UI 114. Navaajo was significantly from the slightly tolerant Luna of the USDA, NM 56-778, and Xanthomonas phaseoli (E. F. Sm.) Dows.]

Seed size of Navaajo is smaller than that of the cultivars Luna, UI 111, and UI 114. Water absorption, an indicator of seed vigor, and protein content were similar in the 4 varieties.

The New Mexico Crop Improvement Assoc. will supervise the production of foundation, registered, and certified seed.

1 Registered by the Crop Sci. Soc. of Am. Approved for publication by the Director of the New Mexico Agric. Exp. Stn. and released to seed growers in 1979.

2 Associate professors of Agronomy, New Mexico State University.