Registration of Crop Cultivars

REGISTRATION OF BEDFORD BARLEY
(Reg. No. 175)

R. I. Wolfe

`BEDFORD' barley (Hordeum vulgare L.) CI 15774 (CN 1898, BT 330, Br. A31-1), was developed at the Agriculture Canada Research Station, Brandon, Manitoba, which is part of the Eastern Prairie Barley Group. It was licensed for sale in Canada in March 1979, No. 1907. It is an F₁ selection made in 1971 from the cross 'Keystone'/4/ 'Vantage'/Jet/151'Nord'/31'Vantmore'141'Bonanza,' completed in 1969.

Bedford is a six-rowed, smooth to semi-smooth awned, spring habit barley that does not meet Canadian malting quality standards.

Bedford is resistant to Puccinia graminis f. sp. tritici Eriks. and E. Henn. It has resistance from the cultivar 'Jet' (CI 967) to Ustilago nuda (Jens.) Rostr., but is susceptible to some collections of this pathogen made in Canada since 1972. It is moderately resistant to Ustilago hordei (Pers.) Lagerh. and Ustilago nigra Tapke. It is moderately susceptible to Pyrenophora teres (Pied.) Drechs. and Rhynchosporium secalis (Oud.) J. J. Davis, and susceptible to Septoria passerinii Sacc. and Erysiphe graminis (D.C.) ex Merat f. sp. hordi Em. Marchal. It is moderately to highly resistant to common root rot (caused by Helminthosporium species), as evidenced by subcrown internode staining, being similar to 'Bonanza' in this regard, but superior to Bonanza in resistance to nodal collapse at maturity.

Bedford was released because of its high yield in eastern and central Manitoba tests, its strong straw, and its good test weight. In yield tests conducted in the area from 1973 to 1978, it outyielded 'Klondike,' the top yielding cultivar, by 8% and Bonanza, the top yielding malting barley, by 17%, in 28 and 24 location year tests, respectively. Bedford yielded well across the rest of the southern portion of the agricultural area of the three Canadian prairie provinces, approximately equalling top established checks. It did not equal the best established checks in the more northerly areas, however. In the United States sites of the U.S.D.A. Great Plains Barley Nursery, 1975 to 1978, 26 location years, it outyielded Klondike, the top named cultivar in the nursery, by 7%.

Bedford was released because of its high yield in eastern and central Manitoba tests, its strong straw, and its good test weight. In yield tests conducted in the area from 1973 to 1978, it outyielded 'Klondike,' the top yielding cultivar, by 8% and Bonanza, the top yielding malting barley, by 17%, in 28 and 24 location year tests, respectively. Bedford yielded well across the rest of the southern portion of the agricultural area of the three Canadian prairie provinces, approximately equalling top established checks. It did not equal the best established checks in the more northerly areas, however. In the United States sites of the U.S.D.A. Great Plains Barley Nursery, 1975 to 1978, 26 location years, it outyielded Klondike, the top named cultivar in the nursery, by 7%.

Bedford is mid-late to late in maturity, being 1 to 2 days later than Klondike, and 1 to 2 cm shorter in height. It is stronger strawed than Klondike, Bonanza, or 'Conquest.'

The principle spike and kernel characteristics are as follows:

Spike. Six-rowed, mid-long, medium lax, erect, base of spike 5 cm in the boot to 10 cm above; lemma awn long, some smooth, some semi-smooth; glume awn 1.5 to 3.5 times the length of the glume; glume hairs short, numerous; rachis edges with moderate to numerous short hairs.

Kernels. Hulled, mid-size; hull smooth to slightly wrinkled; aleurone white; rachilla mid-long, hairs short; barbs on lateral veins none to medium in number; basal marking an incomplete horseshoe depression; test weight heavier than Bonanza or Klondike, similar to 'Peguis'; percent seed over a 2.38 mm slotted screen inferior to 2.38 mm slotted screen inferior to 143.

REGISTRATION OF JOHNSTON
(Reg. No. 176)

R. I. Wolfe

`JOHNSON' barley (Hordeum vulgare L.), CI 15834, Br. C48-1), was developed by the Agriculture Canada Research Station, Brandon, Manitoba, Canada, which is part of the Eastern Prairie Barley Group. It was licensed for sale in Canada in Oct. 1980, No. 2010. It is an F₄ selection made in 1977 from the cross 'JOHNSON' barley, completed in 1973.

Johnston is a six-rowed, smooth awned, spring habit barley that does not meet Canadian malting quality standards.

Johnston is resistant to Puccinia graminis f. sp. tritici Eriks. and E. Henn. It has resistance from the cultivar 'Jet' (Cl 967) to Ustilago nuda (Jens.) Rostr., but is susceptible to some collections of this pathogen made in Canada since 1972. It is susceptible to Ustilago hordei (Pers.) Lagerh. and Ustilago nigra Tapke. It is moderately to highly resistant to common root rot (caused by Helminthosporium species), as evidenced by subcrown internode staining, being similar to 'Bonanza' in this regard, but superior to Bonanza in resistance to nodal collapse at maturity.

Johnston is adapted to most of the Canadian prairie central portions of the agricultural region of Alberta where licensing trials conducted in 1977 to 1979 on the eastern prairies, in 24 location year tests, it outyielded all cultivars, Klondike and Bonanza, by 5 and 10%, respectively. In the same licensing trials on the brown soils of southwestern and southern Alberta, representing 15 location years, it yielded the same two cultivars, by 5 and 12%, respectively. In central and northern Alberta tests, over 14 location years, it yielded both Klondike and Bonanza by 14%.

Johnston is about 5 days later in maturity than Bonanza and 3 cm shorter. The straw is weak, similar to 'O.A.C. Super.'

The principle spike and kernel characteristics are as follows:

Spike. Six-rowed, mid-lax and semi-erect; lemma awn long, some smooth; glume awn two to four times the length of the glume; glume hairs short, sparse to moderately numerous, generally confined to a narrow band; rachis edges with none to a few short hairs.

Kernels. Hulled, mid-size to small; hull smooth to slightly wrinkled; aleurone white; rachilla short to mid-long; lateral veins with few to no barbs; basal mark an incomplete horseshoe depression; test weight similar to Klondike; percent seed over a 2.38 mm slotted screen inferior to 2.38 mm slotted screen inferior to 143.