Registration of ‘Bridge’ Barley

‘BRIDGE’ (Reg. no. CV-232, PI 560137) is a spring two-rowed barley (Hordeum vulgare L.) cultivar developed at the Agriculture Canada Research Station, Lethbridge, AB, Canada, and registered on 14 June 1990 by the Food Production and Inspection Branch, Agriculture Canada. Bridge [‘Zephyr’/ ‘Hector’ (TR521)] was tested at Lethbridge and in the Western Cooperative Two-Row Barley Registration Test under the designation TRS44.

TRS51, tested in the Western Cooperative Two-Row Barley Registration Test (1976-77), outyielded the checks by 3.5 to 8.7% and had superior 1000-kernel weight. TRS51 was not registered because it could not be visually distinguished from current barley varieties registered for malting purposes. TRS51, tested in the Western Cooperative Two-Row Barley Registration Test (1976-77), outyielded the checks at some locations, and had good agronomic characteristics, with short rachilla hairs.

The F1 hybrid (TR521/TR516) was backcrossed five times to TRS51 to incorporate short rachilla hairs for kernel visual distinguishability. Progeny rows from the final backcross were evaluated under irrigation at Lethbridge in 1983. Selection for yield and agronomic characteristics were continued at Lethbridge in 1984 and 1985 and at six locations in Alberta and Saskatchewan in 1986. One of the backcross-derived lines, designated TR544, became Bridge.

Bridge is a two-rowed, rough-awned spring feed barley. Its kernels are covered, midsized, long in relation to width, with white aleurone and short rachilla hairs. The spike is lax, medium long and seminodding. Bridge headed one day earlier than ‘Abee’ and was similar to Abee and ‘Harrington’ in plant height and resistance to lodging.

Bridge was evaluated in the Western Cooperative Two-Row Barley Registration Test, where it yielded 3% more than the feed check cultivar, Abee, over 3 yr (1987–1989), and 6% more than Harrington, the malting check, over 2 yr (1988 and 1989). The increase in grain yield of Bridge over the checks, Abee and Harrington, was slightly greater in the brown soils (5 and 8%, respectively) than in the black and grey soils (3 and 5%, respectively). Bridge demonstrated improved grain quality, with an increase of 1.7 kg hL-1 in test weight and 3.3 g 1000 kernel-1 in kernel weight compared with Abee.

In trials conducted by the Alberta Cereal and Oilseed Advisory Committee, Bridge yielded 8% more than Harrington and 7% more than Abee in a 3-yr (1989–1991) yield comparison with 55 station-yr in south and central Alberta. Bridge compares less favorably in northern Alberta, where it yielded 1% less than Harrington and Abee in a 36-station-yr comparison (1989–1991). Bridge also showed a yield advantage in trials conducted by the Saskatchewan Regional Variety Testing Program, where it yielded 5.7% more than Harrington averaged province-wide (1989–1991).

Bridge is moderately resistant to stem rust (Puccinia graminis Pers.: Pers. f. sp. tritici Eriks.), surface-borne smuts [Ustilago hordei (Pers.:Pers.) Laghers. and U. avenae (Pers.) Rostr., syn. U. nigra lapke] and common root rot [Cochliobolus sativus (Ito & Kuribayashi in Ito) Drechs. ex Dastur.], moderately susceptible to scald [Rhynchosporium secalis (Oudem.) J.J. Davis] and the spot form of net blotch [Pyrenophora teres Drechs.], and susceptible to loose smut [Ustilago tritici (Pers.) Rostr.; syn. U. nuda (Jens.) Rostr.] and net blotch [P. teres]. Bridge has some adult or field resistance to scald, which was noticeable in field trials.

Seed from 75 uniform head rows were bulked to constitute breeder seed of Bridge. Breeder seed is being maintained by Agriculture Canada at the Indian head Experimental Farm in Indian Head, SK, Canada. The Canadian distributor for Bridge is Secan Association, 200-57 Auriga Dr., Nepean, ON, K2E 8B2.

References and Notes


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Registration of ‘Weskan’ Winter Barley

‘WESKAN’ WINTER BARLEY (Hordeum vulgare L.) (Reg. no. CV-253, PI 560331) was developed by the Kansas Agricultural Experiment Station and released to Kansas growers in the fall of 1990.

Weskan, which was tested as 82CS8, was derived from a single F1 head from the cross Purdue 6515A2/KY 66-7-63-1294 (pedigrees unknown) made at the Northwest Research Extension Center, Colby, KS, in 1973. The population from the cross was carried in succeeding generations as an unseleketed bulk until 1981. Head selections were made in 1981 and evaluated in F2, head row in 1982. Seed stock was maintained from 1983 through 1987 by annual roguing of small seed increase blocks. Head selections were obtained again in 1987, and head rows were grown in 1988. Approximately 50 head rows were harvested in bulk to produce breeders seed.

Weskan is a six-rowed, rough-awned, medium-height, midseason maturity, winter feed barley. It is similar to ‘Kaney’ in appearance but is shorter and later heading and has higher yield, test weight, and winterhardiness. The spike is semi lax, short to midlong, and slightly inclined at maturity. Kernels are long to midlong, and have slightly wrinkled lemmas, long-haired rachillas, and colorless aleurone.

Weskan’s average survival across locations was similar to ‘Dicktoo’ and ‘Kearney’ in 1988 through 1990 USDA Winter Barley Hardiness Nurseries. In Kansas tests from 1987 through 1990, Weskan was intermediate between ‘Dundy’ and ‘Hitchcock’ in winterhardiness and maturity. The average yield performance of Weskan was superior to four check cultivars, and exceeded Dundy, the next-highest check cultivar, by ≈9%. The yield superiority of Weskan was, however, limited to the three western Kansas locations at Colby, Hays, and Garden City. Weskan yield was inferior to both Dundy and Hitchcock, in tests at Manhattan and Hutchinson. Test weight of Weskan exceeded all check cultivars by an average of 4%. Weskan culm length averaged 65 cm, compared with averages of 61 and 74 cm for Dundy and Kanby, the shortest and tallest cultivars, respectively. Under favorable growing conditions that result in tall plants, the lodging reaction of Weskan was poor.

When differential lodging occurred in a few trials, Weskan averaged 42%, compared with 49 and 3% for Kanby and Hitchcock, respectively. Because of its lodging susceptibility, Weskan is recommended only for dryland production in western Kansas areas with ≥ 559 mm (≥ 22 inches) average annual precipitation.

Breeder and foundation seed will be maintained by the Department of Agronomy, Kansas Agricultural Experiment Station, Manhattan, KS.