REGISTRATION OF 'HOWELL' WHEAT

'HowELL' (Reg. no CV-776, PI 552816) soft red winter wheat (Triticum aestivum L.) was developed by the Illinois Agricultural Experiment Station and was officially released in 1991. Howell was tested as IL 82-3298 prior to release. The performance of Howell was evaluated in breeding nursery trials in Illinois from 1984 to 1991, in statewide performance trials in Illinois from 1986 to 1991, and for 3 yr in the Uniform Eastern Soft Red Winter Wheat Nursery from 1986 to 1988.

Howell originated from the cross McNair 48-23/IL 70-2225/CI 13855/3/Arthur'/Blueboy'/TN 1571, and was first selected in 1982 as an F₂-derived F₃ line. Howell was repurified in 1986 and 1988. Seed from F₃ spikes selected from Howell was grown in rows in 1986, rows containing variant types were removed, and remaining rows were harvested in bulk. Spikes were again selected in 1987, and 200 F₄ rows were grown in 1988. Most of the rows were uniform and similar to each other. Any rows that differed were removed, and seed from the remaining rows was bulked. Breeder seed of Howell was produced from the progeny of the bulked rows grown in 1988. The breeder seed increase in 1989 was inspected frequently and variants rogued. This breeder seed (F₅) was increased in 1990 and variants again rogued. The variants removed were predominantly awned plants, which were taller than most plants in the cultivar. Foundation seed was produced in 1991 from this repurified breeder seed. Up to 0.5% other types, predominantly (90%) tall awned variants, are allowed in Howell. Except for the difference in height, the tall variants are very similar in appearance to other plants in the cultivar; however, some variants may not be awned.

Howell is an awned, white-chaffed soft red winter wheat cultivar with high yield, excellent winter hardiness, and high test weight. Test weight of Howell has averaged 32 kg m⁻³ more than 'Cardinal' in 18 tests in Illinois. Howell is similar to Cardinal in maturity and height, and yields equal to or better than Cardinal in Illinois. It is easily distinguished from Cardinal, because Howell is awned but Cardinal is apically awnletted.

Coleoptiles of Howell seedlings are white and stem anthocyanin is absent. Auricles and figules are glabrous. The heads are fusiform in shape and classified as midsize with ≈ 4.5 cm per 10 rachis internodes. Kernels of the heads are rounded and the crease is narrow and shallow. The heads are primarily erect at maturity.

Howell is moderately resistant to soilborne wheat mosaic virus, barley yellow dwarf virus, and stem rust (caused by Puccinia graminis Pers.:Pers. f. sp. tritici Erysiphe graminis DC. f. sp. tritici E. Marchal), and susceptible to Biotypes B and D of the Hessian fly. It has not been evaluated against other biotypes of Hessian fly.

Howell has exhibited good to excellent milling quality. Flour yield and break flour yield for Howell have been similar to 'Scotty' and only slightly lower than 'Knox 62'. Howell generally has slightly lower protein percentage, cookie diameter, and cake volume than the soft red winter wheat cultivar Knox 62. Because of the diverse end uses for soft red winter wheat, the baking quality of Howell is considered acceptable.

The generation sequence for seed production of Howell is breeder, foundation, registered, and certified. Foundation seed of Howell was distributed to seedsmen in the fall of 1991. Protection of Howell has been applied for under the Plant Variety Protection Act, Public Law 91-577, and Title V of the Federal Seed Act. Breeder seed of Howell will be maintained by the Illinois Agricultural Experiment Station, Urbana, IL 61801.

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References and Notes


REGISTRATION OF 'TIBER' HARD RED WINTER WHEAT

'Tiber' (Reg. no. CV-775, PI 517194)(MT 8003) is a standard-height hard red winter wheat (Triticum aestivum L.) developed cooperatively by the Montana Agricultural Experiment Station and the USDA-ARS. Tiber was selected out of 'Redwin' (Reg. no. CV-678, CI 17844, MT 7216) for its tolerance to the leaf spotting complex and for its stiff straw, high yield, good level of winterhardiness, and grain protein. Redwin's is MT 6324/MT 7301. MT 6324 is a tall Montana selection with the pedigree 'Yogo'/'Cheyenne'. Selection MT 7301 has the pedigree 'Norin 10'/'Brevoir'14/3*Yogo; and is a stiff-strawed, shatter-resistant semidwarf and brown-awned spikes.

Spikes of Tiber are awned, oblong, and erect. Glumes are reddish-brown, with a majority of the spikes attaining an almost chocolate hue by maturity in most Montana environments. Kernels are red, hard, midlong, and elliptical, with small embryos, narrow creases, and midsized brushes with a mixture of round and angular cheeks. Tiber is similar to Redwin for winterhardiness, shatter resistance and lodging resistance. Tiber's stability for grain yield has been verified in Montana's Instarate Nursery (57 station-yr), as well as in the Western Regional Hard Red Winter Wheat Nursery (6 station-yr) and in the Northern Regional Performance Nursery (4 station-yr). Under low yield conditions, it equals 'Neeley', the high-yield check, and yields 5% more than Redwin overall. Tiber is recommended for commercial production in Montana east of the Continental Divide, where stem rust and dwarf bunt are not a problem. Test weight equaled the mean of that for Neeley, Redwin, and 'Winalta' over 57 station-yr (1980-1990). Heading date is the same as Redwin and Winalta, and 1 d earlier than Neeley. Plant height averaged 90 cm over 26 location-yr in Montana from 1987 to 1990, and averaged 2 cm taller than Redwin, 3 cm taller than Neeley, and 5 cm shorter than Winalta. Grain protein of Tiber was 13.1%, while the mean of three checks was 13.6% for 57 station-yr.

In 57 station-yr of testing Tiber had flour yield of 66.7%, farinograph absorption of 60.9%, loaf volume of 862 cm³, and a crumb score of 4.5 (1 = poor; 10 = excellent). Neeley, Redwin, and Winalta (which together produce =50% of Montana's winter wheat) averaged 67.4% flour yield.