REGISTRATION OF EUREKA WHEAT
(Reg. No. 617)

D. L. Keim and G. W. Buchenau

'EUREKA', CI 17738, SD 2185, is a hard red spring wheat (Triticum aestivum L. em Thell) developed at the Agricultural Experimental Station, South Dakota State University, Brookings, in cooperation with AR-SEA-USDA. It is an F₅-derived head selection, from the cross ERA/3/CORRE CAMINO//CIANO 67/SONORA 64, CM 10656, made in 1970 by the International Maize and Wheat Improvement Center (CIMMYT), Mexico. F₂ heads were selected in Mexico and grown as head rows at Brookings in 1973. F₄ and F₅ head selections were made in the greenhouse and field, respectively. An F₆ head row grown in Mexico was bulked and designated SD 2185. Eureka was evaluated in state trials from 1975 to 1977 in the Uniform Regional Spring Wheat Yield Nursery (URSWYN) and the Crop Quality Council Tests in 1977.

Eureka has a spring growth habit, mid-season maturity, and a tall, white, hollow stem. Spikes are awnless, fusiform, mid-dense, and erect. Glumes are glabrous, yellowish-white, short, and mid-wide with a well-defined keel. Shoulders are mid-wide and oblique or rounded; and the beak is obtuse, narrow, and 1 mm long. The kernels are red, hard, mid-long and ovate with angular cheeks and a mid-wide, mid-deep crease. Plants at the booting stage are blue-green with no waxy bloom.

Eureka has yielded slightly better than 'Waldron' when grown in areas producing more than 13 quintals/ha. The ergot problem occasionally found in Waldron is not anticipated because Eureka does not exhibit the sterility sometimes observed in Waldron. Test weight is similar to Waldron. In the 1977 URSWYN, Eureka exhibited higher resistance to leaf rust (incited by Puccinia recondita Rob. ex Desm. f. sp. tritici Erisk.) than Waldron and was resistant to prevalent races of stem rust caused by Puccinia graminis f. sp. tritici Erisk. and E. Hoff. Grain protein is similar to Waldron. Milling and baking characteristics are similar to Waldron, except Eureka has a longer mixing time.

Eureka was named and released by the South Dakota Agricultural Experimental Station on 1 Jan. 1978. Breeder seed will be maintained by the Foundation Seedstocks Project, South Dakota State University, Brookings, SD 57007. Plant Variety Protection Certificate No. 7800105 with the seed certification option has been granted.

REGISTRATION OF HOUSER WHEAT
(Reg. No. 618)

Neal F. Jensen

'Houser' wheat (Triticum aestivum L. em. Thell) is a soft white winter wheat developed by the South Dakota Agricultural Experiment Station. Houser is a selection (formerly NY 5954-36) from the following 1959 Ithaca hybrid: 'Brevor'/'Norin 10'/NY wheat-rye selection; 'Hussar' C.I. 11682/'Yorkwin'4/'Genesee'/C.I. 8/'Avon'.

The first awned wheat cultivar introduced at Ithaca Station (awnless cultivars have long dominated production), Houser's outstanding characteristics include a medium-short, lodging resistant plant, recovery after a hard winter. It has a winter hardiness, and is midseason in maturity. Houser is 8 to 10 cm shorter than 'Yorkstar' and 'Arrow' and about 2 cm taller than 'Ticonderoga'; it has shown excellent field standability beyond maturity dates. The head is medium-long and white chaff. The nodding aspect of the head and the presence of awns, may provide some resistance to sprouting. The kernels of Houser are medium-long, plump, and ovate to oval; the crease is mid-wide and rounded to angular cheeks. Houser has excellent resistance to loose smut (caused by Ustilago tritici (Pers.) Rostr.), moderate field resistance to powdery mildew (caused by Erysiphe graminis DC. f. sp. triticci Em. Marchal) but is susceptible to common bunt (caused by Tilletia caries (DC.) Tul.) and to dwarf bunt (caused by T. controversa Kühn.), and to leaf rust (caused by Puccinia recondita Rob. ex Desm. f. sp. tritici). Test weight is moderately low but comparable to that of Yorkstar and Ticonderoga. Milling and baking characteristics are excellent and comparable to other soft white cultivars as determined by quality tests conducted by AR-SEA-USDA, Soft Wheat Quality Laboratory, Ohio.

Yield performance of Houser in 18 tests over the years at Ithaca show that Houser exceeded the average of 'Yorkstar', 'Arrow', and Ticonderoga by 7%.

The generation sequence of seed production will be Breeder, Foundation, and Certified. Cultivar protection is sought under the Plant Variety Protection Act, Public 91-577. If granted, Houser may be sold only as a class of certified seed and must be labeled as a protected cultivar. Houser was approved for release in 1977 and approximately 20 acres were sown for 1978 harvest. Breeder seed will be maintained by the Cornell University Agricultural Experiment Station.

Houser is named in honor of the late Prof. Harry Homer Love, the breeder of Yorkwin, Cornell 595 and Genesee, and many other small grain cultivars at the Ithaca Station.

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