REGISTRATION OF ROUGHRIDER WHEAT

J. R. Erickson, L. D. Sibbitt, and J. D. Miller

'ROUGHRIDER' (Triticum aestivum L. em Thell.), CI 17439, is a hard red winter wheat developed by the Agricultural Experiment Station, North Dakota State University, Fargo, ND, in cooperation with the ARS, USDA. It was selected from the cross 'Seu Seul'/CI 12500//RedChief//Pawnee'/3/'Cheyenne'/4/'Hume'/5/'Yogo'/Frouinara'/2*'Minter' made in 1965 at the Agricultural Experiment Station, South Dakota State University, Brookings, S.Dak., to combine winterhardiness and rust resistance. Roughrider resulted from a single plant selection made in the F₁ generation. It has been tested in North Dakota since 1970 under the designation ND 7121.

Roughrider is mid-tall, with white, mid-strong, hollow stems. The spikes are awned, fusiform, lax, and inclined. The glumes are short, narrow, glabrous and white with shoulders narrow and wanting and acuminate beaks. The kernels are red, mid-long, hard and ovate with a mid-sized germ, narrow, mid-deep crease, rounded cheeks, and mid-long brush.

In North Dakota trials from 1973 to 1975, Roughrider outyielded 'Ford' and 'Winoka' by 11% and 9%, respectively. Roughrider is equivalent to Ford and superior to Winoka for winterhardiness. Its test weight is about 2 kg/liter heavier than that of Ford and slightly lighter than Winoka. Roughrider heads 2 days earlier and is about 8 cm shorter than Ford. It is similar to Winoka for both traits. It is more lodging resistant than either Ford or Winoka. Roughrider has field resistance to stem rust, (Puccinia graminis f. sp. tritici Eriks. & E. Henn.), and has shown greater resistance to certain stem rust races when inoculated in the seedling and adult stages than either Ford or Winoka. It is susceptible to leaf rust, (Puccinia recondita Rob. ex Desm. f. sp. tritici Eriks). The overall milling and baking quality of Roughrider is satisfactory. It was faulted for high flour ash and slightly inferior crumb texture and color. It is about 1.5 percentage points lower in protein than hard red winter wheat when grown under similar conditions. Roughrider has good water absorption and is satisfactory for other quality characteristics. This cultivar is described further in North Dakota Farm Research.

Roughrider was named and released by the Agricultural Experiment Station, North Dakota State University, Fargo, ND, on 18 Dec. 1975. Breeder seed will be maintained by the Seedstocks Project, Agricultural Experiment Station, North Dakota State University, Fargo, ND 58102. The National Small Grain Variety Review Board has approved Roughrider for certification.

1 Registered by the Crop Sci. Soc. Am. Published with approval of the Director, Agric. Exp. Stn., North Dakota State Univ., Fargo, ND 58102. Accepted 9 May 1977.
2 Associate professor, Agron. Dep. and professor, Cereal Chemistry and Technology Dep., ND State Univ.; and plant pathologist, ARS, USDA, Fargo, ND 58102.

REGISTRATION OF ORBIT TALL WHEATGRASS

T. Lawrence

'ORBIT' tall wheatgrass (Agropyron elongatum) was developed at the Research Station, Agriculture Canada, Swift Current, Sask. It was tested experimentally in Saskatchewan and in February 1966 was the first cultivar censed for use in Canada.

Orbit is a composite made up of seed from high seed yielding, open-pollinated lines plus high yielding, three-clone synthetic. The original seed was made from a space-planted breeding nursery with differential winterkilling. The nursery was established from locally selected strains and USDA P.L. 488 material obtained from the University of Nebraska.

Spikes are medium lax, tapered, rough-awned, white at maturity. Glumes are medium wide at the shoulder and the beak is mid-long. Kernels are mid-long and red in color.

Although Hart originated as an F₁ plant selected from a single plant selection made in the F₁ generation, 800 rows of the S₄ generation were harvested and composited to start the increase. Some observable genetic variability in height is present within the strain. From 1,000 progeny rows of the S₅ generation the final selection was made. Hart may contain a maximum of 1% of these types of rust-resistance factors in seedling stages. The overall milling and baking quality of Hart is acceptable when grown in areas where it is well adapted.

Breeder seed of Hart will be maintained by the Missouri Agricultural Experiment Station, Columbia, MO 65201 and associate professor of plant breeding, University of Missouri State Univ., University Park, PA 16802.

1 Registered by the Crop Sci. Soc. Am. Published with approval of the Associate Director, Pennsylvania Agric. Exp. Stn. Approved 9 May 1977.
2 Professors, Dep. of Agronomy, Univ. of Missouri, Columbia, MO 65201 and associate professor of plant breeding, Pennsylvania State Univ., University Park, PA 16802.