REGISTRATION OF ROUGHRIDER WHEAT
(Reg. No. 589)

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

*Roughrider* (Triticum aestivum L. em Thell.), Cl 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 'Sewa Sutton'/Cl 12500/'Redchief'/Pawnee'/3/'Cheyenne'/4/'Hume'/5/'Yogo'/Fruitana'/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 F6 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 'Froid' and 'Winoka' by 11 and 9%, respectively. Roughrider is equivalent to Froid and superior to Winoka for winterhardiness. It test weight is about 2 kg/ha heavier than that of Froid and slightly lighter than Winoka. Roughrider heads 2 days earlier and is about 8 cm shorter than Froid. It is similar to Winoka for both traits. It is more lodging resistant than either Froid 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 Froid 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 spring wheats 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, N.Dak., 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.

REGISTRATION OF ORBIT WHEATGRASS
(Reg. No. 582)

T. Lawrence

*Orbit* (Agropyron elongatum (Host.) P.B.) was developed at the Research Station, Agriculture Canada, Swift Current, Sask. It was tested experimentally and in February 1966 was the first cultivar censused for use in Canada.

Orbit is a composite made up of seed from high yielding, high-spring yielding, open-pollinated lines plus high yielding, three-clone synthetic. The original was made from a space-planted breeding nursery for differential winterkilling. The nursery was established from locally selected strains and USDA P.I. 98526 which was obtained from the University of Nebraska.

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

Although Hart originated as an F1 plant seed, it was present within the strain. From 1,000 progeny selections made in the F2 generation, 800 rows were harvested and composited to start the increase. Some observable genetic variability size. Height is slightly variable (up to three heads from the average of the field is allowed). Awns to 7 cm most frequent) in length but may be reduced further in the lower spikelets or in sections of the spikelet. For the irregular character of height, tall, and tall, awned types, Hart may contain a maximum of these types of 1.0% for the foundation seed, the registered seed class, and 3.0% for the commercial class. A tall, awned plant has its spike more than 1 cm above the average head height of the field. This is not observed in the selection process. Such a percentage may not be uniformly expressed. Further selection within a cultivar, or production in different environments, may alter the frequency of such characters within the population.

Compared to 'Arthur', Hart has yielded 10% and 15% more in Pennsylvania, had less lodging and test weight, and was about 2 days later in Missouri. Missouri Hart is more tolerant to glume blotch and is less tolerant to wheat spindle streak than 'Arthur'.

Soft wheat quality tests indicate that the protein quality of Hart is acceptable when grown in areas where it is adapted.

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

---

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.