REGISTRATION OF NEWTON WHEAT[1]

(Reg. No. 601)

E. G. Heyne and C. L. Niblett

'NEWTON' CI 17715, is a hard red winter wheat (*Triticum aestivum* L. em Thell.) selected from the cross 'Pitic 62'//II 53-526 ('Chris' sib)/'Sonora 64'/3/Sonora 64/'Klein Rendidor'/4/'Scout' made by Pioneer Hi-Bred International, Inc. in 1967. F_2 seed was produced in Colorado from spring seeding. The F_3 and F_4 generations were grown as thinly seeded bulks in Kansas at Hays in 1969 and at Manhattan and Hutchinson in 1970. About 6,400 F_4 plant progeny lines were grown in the F_5 generation in 1971. Newton is an increase of a single F_4 plant and was assigned the Kansas selection number KS73112 in 1973. It was tested in the Kansas Intra State Nursery in 1974-1977 and in the SRPN in 1976 and 1977. Its yield performance has been above average.

The important characteristics of Newton are its resistance to soil-borne wheat mosaic virus and relatively short stiff straw. In addition to these two characteristics, Newton is moderately resistant to leaf rust (*Puccinia recondita* Rob. ex Desm. f. sp. *tritici*) and stem rust (*P. graminis* Pers. f. sp. *tritici* Eriks) races currently common in Kansas. It is susceptible to Hessian fly (*Mayetiola destructor* Say), bunt (*Tilletia carries* (DC.) Tul.) mildew (*Erysiphe graminis tritici* E. Marchal), and *Septoria* spp.

Quality of the protein is excellent and equal to that of 'Eagle'. Newton has a medium mixing time slightly longer than Scout, and average protein content, and above average loaf volume potential.

Newton is about equal to 'Triumph' in winterhardiness and has midseason maturity. It has short stiff straw but not as short as most one-gene short stature wheats. The culm, glumes, and awns are white; the peduncle often is wavy; the spike is awned, varying from 3 to 7 cm in length, with two to three more spikelets than most hard red winter wheats, and often has a third fertile floret. The shoulders are nearly square and narrow. The beaks vary from 2 to 6 mm long. The kernels are red, hard, midlong, and elliptical to ovate; germ is small. The crease is straight; a straight line crease is often present on the top of the kernel. The brush is midsized.

Variety protection has been applied for under the Plant Variety Protection Act, Public Law 91-577. Foundation seed will be maintained by the Kansas Agricultural Experiment Station, Manhattan, KS 66506.