REGISTRATION OF CROP CULTIVARS

Reed is midseason, midtall (110 cm), with strong white or very lightly tinged purple stems. Spires are awned, fusiform, midnarrow, and erect to inclined. Glumes are glabrous white, midlong, and midwide. Shoulders are wide and square with obuse, midwide beaks about 0.5 mm long. Awnlets are white and about 3 to 15 mm long. Kernels are red, midlong, soft, and ovate with a midseed germ and midwide, middeep crease with rounded cheeks. The brush is large and midlong.

Reed was resistant to the races of leaf rust (*Puccinia recondita* Ro. ex Desm. f. sp. tritici) in the eastern U.S. when it was released. It is resistant to the soil-borne mosaic disease. Reed is susceptible to stem rust (*Puccinia graminis* f. sp. tritici, & E. Henn.), powdery mildew (*Erysiphe graminis* DC. f. sp. tritici Em. Marchal), and loose smut (*Ustilago tritici* (Pers.) Rost.). It has resistance to *H* (H$_1$), to *H*$_2$ to *H*$_6$, *H*$_7$, and *H*$_{13/7}$, to *H*$_{13/7}$, to *H*$_{13/7}$, to *H*$_{13/7}$, to *H*$_{13/7}$, to *H*$_{13/7}$, and to *H*$_{13/7}$ in the adult-plant stage, to leaf rust winterhardiness, and milling and baking qualities. Both are derived from 16 F$_3$ plants which were derived from one field of *Trumbull* $	imes$ *Hope* $	imes$ *Hussar*/$Knox*5/'Fultz'/'Hungarian'/2/'Illinois'/4/W38'/'Wabash'/4/Fairfield'/6/Trumbull*'/2/Hope*/7/Hussar'.

Redcoat resulted from a complex series of crosses designed to combine resistance to leaf rust (*Puccinia recondita* Ro. ex Desm. f. sp. tritici Erks.), stem rust (*Puccinia graminis* f. sp. tritici Erks. & E. Henn.), powdery mildew (*Erysiphe graminis* DC f. sp. tritici Em. Marchal), soil-borne mosaic, and Hessian fly (*Mayetiola destructor* Say) with superior agronomic type in a soft red winter wheat. The first cross was made in 1929 and the last in 1945. Following the final cross, plant selections were made in the F$_1$, F$_2$, and F$_3$ generations. Breeder seed in 1959 was in the F$_3$ generation of selfing.

Redcoat became a widely grown cultivar in the northern part of the eastern soft red winter wheat region of the U.S. It was the predominant cultivar in Indiana, Delaware, and Maryland by 1964 and continuing to 1969.

Redcoat is intermediate in plant height (about 104 cm) and intermediate in maturity between *Knox* and *Vigo*. The straw of Redcoat is exceptionally strong, and it may be produced with high rates of N fertilizer without lodging.

The milling and baking quality of Redcoat is satisfactory but inferior to those of *Knox* and *Monon*. It has a harder kernel and stronger gluten than Knox.

Redcoat is midseason and midtall with a light purple, very strong stem. The spikes are middense to lax, oblong to fusiform, erect to inclined, and awnleted. Glumes are glabrous, white, midlong, and midwide, with midwide, rounded to square shoulders. Beaks are midwide, obus and about 0.5 mm long. Awnlets are white and 5 to 30 mm long. Kernels are red, midlong, ovate, and soft, with a large germ and a midwide, middeep crease, and rounded cheeks. The brush is midized and midlong.

Redcoat is resistant to the races of leaf rust prevalent in the eastern soft red winter wheat region. It has adult-plant resistance to many races of stem rust and to powdery mildew. It is resistant to the soil-borne mosaic virus disease but is very susceptible to the soil-borne wheat spindle streak mosaic virus disease. Redcoat is moderately susceptible to loose smut (*Ustilago tritici* (Pers.) Rost.) and has the W38 source (H$_1$ H$_2$) resistance to races GP, A, and C of the Hessian fly.

Breeder seed will be maintained by Purdue University.

REGISTRATION OF REDCOAT WHEAT

(Reg. No 594)

F. L. Patterson, J. F. Schafer, and R. L. Gallun

'Redcoat' wheat (*Triticum aestivum* L. em Thell.), CI 13701, is a soft red winter cultivar developed cooperatively by the Purdue University Agricultural Experiment Station and the SEA, USDA, and released in 1960. Along with the authors, major contributions to the breeding of Redcoat were made by three former staff members of Purdue and the SEA, USDA.

Redcoat, tested earlier as Purdue 4548A2-5-18, has a unique combination of characters from many parents. The parentage is *Supers* PI 105,835/Fultz* scir CI 11,845/7/Wabash'8/Fultz'/Hungarian'/2/'Illinois'/1, W38'/3/Wabash'/4/Fairfield'/6/Trumbull*'/2/Hope*/Hussar'.

REGISTRATION OF KNOX 62 WHEAT

(Reg. No 593)

F. L. Patterson, J. F. Schafer, and R. L. Gallun

'Knox 62' wheat (*Triticum aestivum* L. em Thell.), CI 13701, is a soft red winter wheat cultivar developed cooperatively by the Purdue University Agricultural Experiment Station and the SEA, USDA, and released in 1962. Along with the authors, major contributions were made to the breeding of Knox 62 by three former staff members of Purdue and the SEA.

Knox 62, tested earlier as Purdue 551G-1-16, is a 'Knox' (Reg. No. 353) type with resistance to the Hessian fly (*Mayetiola destructor* Say) added by backcross breeding of an F$_3$ of two Purdue lines, Purdue 471A8-26-2 and Purdue 4126A9-16-15-3, to Knox. The parentage of Knox 62 is Knox*5/8*/Kawvale'/5/'Fairfield'/6/Tribull*'/5'/Hope*/Hussar'/7/Knox sb/Fairfield'/4/PI 94587/2/Fultz/Hungarian'/5'/Fultz/Hungarian. Knox 62 was derived from 16 F$_3$ plants which were derived from one F$_1$ plant following the backcrosses.

Knox 62 is indistinguishable from Knox in maturity, yield, winterhardiness, and milling and baking qualities. Both are resistant to the soil-borne mosaic virus disease and both have the slow-rusting and slow-mildewing types of general resistance, in the adult-plant stage, to leaf rust (*Puccinia recondita* Rob. ex Desm. f. sp. tritici Erks.) and powdery mildew (*Erysiphe graminis* DC. f. sp. tritici em. Marchal).

Knox 62 carries the *H*$_1$ *H*$_2$ resistant germ from PI 94587 conditioning resistance to races A and B of the Hessian fly, where as Knox is susceptible. Knox 62 has not been as susceptible as Knox to loose smut (*Ustilago tritici* (Pers.) Rost.) from artificial inoculation or to natural infection. Knox 62 is slightly inferior to Knox in straw strength, but is identical to Knox in spike, glume, awnlet, and kernel characteristics. Knox 62 has been grown on limited acreages as a replacement for Knox in the eastern U.S.

Breeder seed will be maintained by Purdue University.

REGISTRATION OF BENHUR WHEAT

(Reg. No. 595)

F. L. Patterson, J. F. Schafer, R. L. Gallun, and J. J. Roberts

'Benhur' wheat (*Triticum aestivum* L. em Thell.) CI 14054, is a soft red winter cultivar developed cooperatively by the Purdue University Agricultural Experiment Station and the SEA,