REGISTRATION OF ARTHUR 71 AND ABE WHEAT*

(Reg. Nos. 560 and 562)

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*ARTHUR 71 and 'ABE' wheat (Triticum aestivum L. em. Thell.) were developed cooperatively by the Purdue Univ. Agric. Exp. Stn., the ARS, USDA, and released by the two agencies in 1971 and 1972, respectively. Along with the authors, major contributions to the breeding of Arthur 71 and Abe were made by two former staff members of Purdue and ARS.

Arthur 71 (CI 152892), previously designated Purdue 66278 Composite, is a soft red winter wheat and a backcross derivative of 'Arthr' with added resistance to Hessian fly of the 'Ribeiro' type (H1 gene) and resistance to leaf rust of the 'Transfer' type (L9). The parentage is Arthur *3/4/Purdue 6058A2-15-9-2/5 'Riley'*3/2/Riley 67. The Hessian fly resistance (H1) was introduced via Purdue 6058A2-15-9-2 and the leaf rust resistance (L9) Riley 67. During backcrossing, F1 plants were used which had been identified as possessing the L9 gene for seedling resistance to leaf rust. F2 progenies of each parent F1 plant were tested with race D of Hessian fly to verify that the parents carried to the next backcross all possessed the H1 gene. The final breeder seed was derived from two F2 plants of the final backcross. Progenies were tested for resistance to leaf rust and race D of Hessian fly in the F2, F3, and F4 generations of selfing following the final backcross. Seed from 284 F4 plants formed the breeder seed of Arthur 71.

Arthur 71 resembles Arthur in most characters. It is a moderately early cultivar and midtall (93 cm) like Arthur. Yield of Arthur 71 has averaged slightly lower than Arthur. Leaves are light green vs. Arthur's medium green.

Kernels are medium, oblong, apically awnleted, yellow, and generally nodding at maturity, all like Arthur. Glumes are similar to those of Arthur being midlong and midwide with shoulders rounded (to square). Stems are midwide and 0.5 to 1.5-mm long. Coleoptile color is light purple.

Kernels are red and ovate with rounded cheeks and a middeep crease. The embryo is large. The average weight of 1,000 kernels is about 39 g.

Arthur 71 is resistant to all known races of Hessian fly in greenhouse and field tests except for a new culture of race 58 collected in 1971 which is virulent on 'Transfer' (L9). Arthur 71 is similar to Arthur in its high resistance to powdery mildew, loose smut, and stem rust. It has the LR 9 gene for resistance to leaf rust in addition to resistance from Arthur.

Spikes are middense, oblong, apically awnleted, yellow, and generally nodding at maturity. The awnlets of Abe are distinctly longer than those of Arthur and Arthur 71. The glumes are midlong and midwide, with rounded (to square) shoulders. Beaks are midwide and 0.5 to 1.5-mm long. Coleoptile color is light purple.

Kernels are red and ovate with rounded cheeks and a middeep crease. The embryo is large. The average weight of 1,000 kernels is about 39 g.

Abe is resistant to all known races of Hessian fly in greenhouse and field tests. Like Arthur 71, Abe tends to lose its seedling resistance to Hessian fly at prolonged temperatures of \( \geq 21 \) C. Abe is similar to Arthur in its high resistance to powdery mildew and stem rust. It has the LR 9 gene for resistance to leaf rust in addition to resistance from Arthur.

Abe has been highly resistant in both the seedling and adult stages to leaf rust except for a culture of race 58 collected in Indiana in 1971, which is virulent on 'Transfer' (L9).

Abe has good milling and baking quality. It is a little softer in kernel texture than Arthur and similar to Arthur in baking potential.

Abe appears widely adapted in the eastern soft wheat region, based on regional tests during 1971 to 1974.

Arthur 71 and Abe are protected (Certificate 7200084 and 7300049, respectively) under the Plant Variety Protection Act. Seed may be sold only as a class of certified seed. Seed classes recognized are breeder, foundation, registered, and certified. Breeder seed will be maintained by Purdue University.

REGISTRATION OF OASIS WHEAT

(Reg. No. 561)

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'OASIS' wheat (Triticum aestivum L. em. Thell.) CI 15929, is a soft red winter cultivar developed cooperatively by the Purdue Univ. Agric. Exp. Stn. and the ARS, USDA, and released in 1973. Along with the authors, major contributions to the breeding of Oasise were made by two former staff members of Purdue and ARS.

3 Registered by the Crop Sci. Soc. of Am. Cooperative investigations of the Purdue Univ. Agric. Exp. Stn. and the ARS, USDA. Approved for publication as Purdue Univ. Agric. Exp. Stn. journal paper 5,510. Received Apr. 25, 1975.

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