REGISTRATION OF ARTHUR 71 AND ABE WHEAT
(Reg. Nos. 560 and 562)

‘ARTHUR 71’ and ‘ABE’ wheat (Triticum aestivum L. em. Thell.) were developed cooperatively by the Purdue Univ. Agric. Exp. Stn. and the ARS, USDA, and released by the two agencies in 1971 and 1973, 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 15282), previously designated Purdue 66278 Composite, is a soft red winter wheat and a backcross derivative of ‘Arthur’ with added resistance to Hessian fly of the ‘Ribeiro’ type (H₈ gene) and resistance to leaf rust of the ‘Transfer’ type (LR₉). The parentage is Arthur ×/3/Purdue 6028A2-15-9-2/2, ‘Riley’ ×/2/Riley 67. The Hessian fly resistance (H₈) was introduced via Purdue 6028A2-15-9-2 and the leaf rust resistance (LR₉) Riley 67. During backcrossing, F₁ plants were used which had been identified as possessing the LR₉ 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 H₈ gene. The final breeder seed was derived from F₂ plants of the final backcross. Progenies were tested for resistances to leaf rust and race D of Hessian fly in the F₃, F₄, and F₅ generations of selfing following the final backcross. Seed from 264 F₅ plants formed the breeder seed of Arthur 71.

Arthur 71 resembles Arthur in most characters. It is a moderately early cultivar and mid tall (93 cm) like Arthur. Straw is moderately stiff, but not as good as Arthur. Yield of Arthur 71 has averaged slightly lower than Arthur. Leaves are light green vs. Arthur’s medium green.

Spikes are midsized, oblong, apically awnless, yellow, and generally nodding at maturity, all like Arthur. Glumes are also similar to those of Arthur being midlong and midwide with shoulders rounded (to square) and with midwide obtuse beaks 0.5 to 1.5-mm long. Some purple color generally is present on the coleoptile.

Kernels, like Arthur's, are red and ovate with rounded cheeks and a middeep crease. The embryo is large. The average weight of 1,000 kernels is about 38 g.

Arthur 71 is resistant to all known races of Hessian fly in greenhouse and field tests although at prolonged temperatures of 21 C or higher it tends to lose its seedling resistance. It is similar to Arthur in resistance to stem rust, being highly resistant to races 15B, 29, 38, and 56 in field tests. Arthur 71 appears similar to Arthur in its excellent resistance to powdery mildew and to loose smut, and in resistance to soil-borne mosaic. It has been highly resistant (LR₉ gene) to leaf rust in both seedling and adult tests except to a new culture of race 58 collected in Indiana in 1971 which is virulent on ‘Transfer’ (LR₉).

Arthur 71 is similar to Arthur in good soft wheat milling and baking quality.

Abe resembles Arthur 71 in all respects except to be generally early, moderately short (91 cm) culm, stiff straw. Abe has generally exceeded Arthur 71 in yield and straw strength. At booting, Abe is generally light green (vs. green for Arthur and light green for Arthur 71).

Spikes are midsized, oblong, apically awnless, yellow, and generally nodding at maturity. The awns are distinctly longer than those of Arthur and Arthur 71. Abe is similar to Arthur in its high resistance to powdery mildew, loose smut, and stem rust. It has the LR₉ 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 from Indiana in 1971, which is virulent on Transfer.

Abe has good milling and baking quality in kernel texture than Arthur and similar potential.

Abe appears widely adapted in the eastern soft wheat region.

Arthur 71 and Abe are protected (Certificate 7200084 and 7300049, respectively) under the Plant Variety Protection Act, 1972, and may be sold only as a class of certified seed designated as breeder, foundation, registered, and certified. Breeder seed will be maintained by Purdue University.

REGISTRATION OF OASIS WHEAT
(Reg. No. 561)
F. L. Patterson, J. J. Roberts, R. E. Finney and G. E. Shaner

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

Oasis was developed from a cross of Arthur 66278 Composite (CI 15282) and Oasis 66378 Composite (CI 20435) by two former staff members of Purdue and ARS.


Oasis resembles Arthur 71 in all respects except to be generally early, moderately short (91 cm) culm, stiff straw. Oasis has generally exceeded Arthur 71 in yield and straw strength. At booting, Oasis is generally light green (vs. green for Arthur and light green for Arthur 71).

Spikes are midsized, oblong, apically awnless, yellow, and generally nodding at maturity. The awns are distinctly longer than those of Arthur and Arthur 71. Oasis is similar to Arthur in its high resistance to powdery mildew, loose smut, and stem rust. It has the LR₉ gene for resistance to leaf rust in addition to resistance from Arthur.

Oasis has been highly resistant in both the seedling and adult stages to leaf rust except for a culture of race 58 from Indiana in 1971, which is virulent on Transfer.

Oasis has good milling and baking quality in kernel texture than Arthur and similar potential.

Oasis appears widely adapted in the eastern soft wheat region.

Oasis is protected under the Plant Variety Protection Act, 1972, and may be sold only as a class of certified seed designated as breeder, foundation, registered, and certified. Breeder seed will be maintained by Purdue University.