Registration of 'Foster' Wheat

‘Foster’ (Reg. no. CV-835, PI 593689) is a soft red winter wheat (*Triticum aestivum* L.) developed by the Kentucky Agricultural Experiment Station and released in 1995. Foster was released for its superior grain yield, grain volume weight, and milling and baking quality. Foster was derived from the cross KY 83-60/'Tyler'//KY 83-75. KY 83-60 and KY 83-75 were selections from bulk populations provided by T.M. Starling, formerly small grains breeder at Virginia Polytechnic Institute and State University. The pedigree of KY 83-60 is ‘Coker 65-20'/'Arthur'//4/'Chul' 8 CC/VA 68-22-7/‘Abe'//3/NA 72-54-14. The pedigree of KY 83-75 is ‘Suwon 92'//Arthur//Arthur//VA 70-52-2. Foster was developed through a combination of pedigree and bulk breeding methods. Single-head pedigree selection was initiated in the F2 generation. Subsequent generations through F7 were grown as headrows and reselected. A single F8 progeny plot was increased in the F9 and F10 generations to produce F11 breeder seed.

Foster is white-chaffed, awnleted, with midlong spikes and intermediate size kernels. It is of midseason maturity, heading approximately 3 d earlier than ‘Cardinal'. Foster is of intermediate height, similar to ‘Jackson'. Winterhardiness of Foster is good, similar to that of ‘Verne'.

Foster was tested under the experimental designation KY 85C-31-6. In 3 yr of testing in the seven location Kentucky state variety trial, grain yield of Foster was 115% of ‘Clark', and 103% of ‘Northrup King Coker 9803'. Foster was tested for 2 yr in the Uniform Eastern Soft Red Winter Wheat Nursery, where it was the top-yielding entry across 33 locations in 1994, averaging 5172 kg ha⁻¹ and the third highest-yielding entry across 28 locations in 1995, averaging 4483 kg ha⁻¹. Grain volume weight of Foster is slightly higher than that of ‘Madison'. In 4 yr of testing at the USDA Soft Wheat Quality Lab in Wooster, OH, Foster has demonstrated excellent milling quality, similar to Cardinal, with high break flour yield and softness equivalent, and excellent baking quality, similar to ‘Caldwell'.

Foster is resistant to powdery mildew (caused by *Erysiphe graminis* DC. f. sp. *tritici* Ém. Marchal), and septoria leaf blotch (caused by *Septoria tritici* Roberge ex Desmaz.). Foster has moderate resistance to glume blotch (caused by *Phaeosphaeria nodorum* (E. Müller) Hedjaroude), and to most races of leaf rust (caused by *Puccinia recondita* Roberge ex Desmaz.) to which it was exposed in the Uniform Eastern Soft Red Winter Wheat Nursery. Foster is moderately susceptible to barley yellow dwarf virus, similar to Verne, and is susceptible to all biotypes of the Hessian fly [*Mayetiola destructor* (Say)].

Exclusive marketing rights to Foster have been granted to Agripro Seeds, Inc. Seed classes of Foster will be breeder, foundation, registered, and certified. Breeder seed will be maintained by the Foundation Seed Project, Dep. of Agronomy, University of Kentucky, Lexington, KY 40546-0091. Application for U.S. plant variety protection (Title V) of Foster will be submitted by the Kentucky Agricultural Experiment Station.

Registration of ‘Arlin’ Wheat

‘Arlin’ (Reg. no. CV-833, PI 564246), is a hard white winter wheat (*Triticum aestivum* L.) developed cooperatively by the Kansas Agricultural Experiment Station and the USDA-ARS. It was released to seed producers in 1992. Arlin was selected from a population of intercrossed hard red winter wheat and spring wheat genotypes. White-seeded segregates were selected in the F4 generation. Arlin was selected as an F5 breeder and tested as KS-SB-369-7.

Arlin is short awned, white-glumed, and semidwarf. It has a tapering, middense, and inclined at maturity. Arlin has an upright heading, with an erect, nontwisted flag leaf. It has a very early heading at anthesis. Glumes are white, midlong, and narrow. Shoulders are midwide and rounded; beaks are medium short, and acuminate. The kernel is white, hard, ovate; the germ is medium; the crease is midwide; cheeks are rounded; and the brush is medium.

Arlin has been tested in the Kansas IntraState Nursery to 1992, Kansas Variety Performance Tests in 1991 to 1992, the USDA Southern Regional Performance Nursery in 1991 to 1992. Arlin is early, 2 d earlier than ‘Karl 92' and ‘Rio Blanco'. Arlin is moderately winterhardy, similar to ‘Newton' in USDA regional observation nurseries. In the USDA Performance Tests (20 location-years), Arlin's grain yield was 4% higher than those of Rio Blanco and ‘TAM 107'. Arlin is well adapted for southwestern Kansas cropping districts and well adapted to irrigated production.

Arlin is moderately resistant to wheat spindle mosaic virus (WSSMV) and stem rust (caused by *Puccinia graminis* Roberge ex Desmaz.), powdery mildew (caused by *Erysiphe graminis* DC. f. sp. *tritici* Ém. Marchal), and tan spot (caused by *Septoria tritici* Roberge in Desmaz.). Arlin is moderately resistant to barley yellow dwarf virus (caused by *Pyrenophora trichostoma* (Fr.)Fuck.), fusarium leaf blight (caused by *Phaeosphaeria nodorum*), and soilborne mosaic virus (SBWMV).

Arlin has excellent milling properties, characterizing its kernels and high grain volume weight. Its protein content is equal to that of ‘Eagle' and 10 g kg⁻¹ less than that of ‘Cardinal'. Arlin has demonstrated dough mixing time and tolerance, as measured by the mixograph, that are most similar to those of ‘Newton'. Arlin’s baking characteristics, loaf volume potential, and crumb grain and texture are most similar to those of ‘Eagle'.

Cultivar protection under the U.S. Plant Variety Protection Act, Public Law 91-577, has been granted (PVP Certificate no. 9300123). Breeder seed will be maintained by the Foundation Seed Project, Dep. of Agronomy, University of Kentucky, Lexington, KY 40546-0091. Application for U.S. plant variety protection (Title V) of Arlin will be submitted by the Kansas Agricultural Experiment Station, Manhattan, KS 66506.


References and Notes

1. R.G. Sears and W.F. Heer, Dep. of Agronomy, and...