

REGISTRATION OF KS89WGRC7 LEAF RUST- RESISTANT HARD RED WINTER WHEAT GERMPLASM

KS89WGRC7 (Reg. no. GP-322, PI 535770) is a leaf rust (caused by *Puccinia recondita* Roberge ex Desmaz.)-resistant hard red winter wheat (*Triticum aestivum* L.) germplasm line developed cooperatively by the Kansas Agricultural Experiment Station, the USDA-ARS, and the Wheat Genetics Resource Center (WGRC), Kansas State University. It was released as a germplasm in January 1990.

KS89WGRC7 seedlings produced low leaf rust infection types [O3C to 23C, in the notation of Browder and Young (1)] with culture PRTUS6. In the field at Manhattan, KS, in 1987 and 1988, under severe leaf rust epidemics, KS89WGRC7 scored as "trace, moderately resistant."

The pedigree of KS89WGRC7 is 'Wichita'//TA 1649/2*Wichita. TA 1649 is a leaf rust-resistant accession of *Aegilops squarrosa* L. [syn. *T. tauschii* (Coss.) Schmal.], collected by Kyoto University, Japan, and obtained by the WGRC from the University of California, Riverside (2). A direct hybrid between TA1649 and Wichita was backcrossed to Wichita (3). A resistant BC₁F₂ plant was backcrossed as male, and KS89WGRC7 originated from a BC₂F₂ plant showing low reaction type (O3C) and producing uniformly resistant selfed progeny.

Leaf rust resistance in KS89WGRC7 is governed by a dominant gene on Chromosome 1D, based on field and greenhouse reactions of F₂ plants and F₂-derived lines in F₃ from crosses with Wichita D-genome monosomics (4). The linkage relationship between this locus and the *Lr21* locus, also located on 1D, is unknown; however, the spectrum of reactions of the two genes to a range of leaf rust cultures differ.

KS89WGRC7 is similar to Wichita in height, maturity,

and general phenotype. It is susceptible to soil-borne mosaic virus and Hessian fly [*Mayetiola destructor* (Say)]. Its leaf rust resistance has been stable through three generations of propagation in the field.

Seed of KS89WGRC7 (5 g) is available upon written request. It is asked that appropriate recognition of source be given when this germplasm contributes to research or development of new cultivars. Seed stocks are maintained by the WGRC, Department of Plant Pathology, Throckmorton Hall, Kansas State University, Manhattan, KS 66506.

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References and Notes

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5. B.S. Gill, W.J. Raupp, Dep. of Plant Pathology; L.E. Browder, USDA-ARS (retired) and Dep. of Plant Pathology; T.S. Cox, USDA-ARS and Dep. of Agronomy; and R.G. Sears, Dep. of Agronomy, Kansas State Univ., Manhattan, KS 66506. Cooperative investigations of the Kansas Agric. Exp. Stn. and the USDA-ARS. Contribution no. 90-343-J, Kansas Agric. Exp. Stn., Kansas State Univ. Research supported in part by the Kansas Wheat Commission and the Kansas Crop Improvement Assoc. Registration by CSSA. Accepted 30 June 1990. *Corresponding author.