

**REGISTRATION OF KS89WGRC4 HARD RED
WINTER WHEAT GERMPLASM WITH
RESISTANCE TO HESSIAN FLY, GREENBUG,
AND SOIL-BORNE MOSAIC VIRUS**

KS89WGRC4 (Reg. no. GP-323, PI 535767) is a hard red winter wheat germplasm with resistance to Hessian fly [*Mayetiola destructor* (Say)], greenbug (*Schizaphis graminum* Rondani), and soil-borne mosaic virus. It was developed cooperatively by the Kansas Agricultural Experiment Station, the USDA-ARS, and the Wheat Genetics Resource Center (WGRC) at Kansas State University. It was released in January 1990.

KS89WGRC4 is resistant to Biotype D of Hessian fly and Biotype E of greenbug. In separate greenhouse seedling tests for resistance to the two insects, 100% of the plants were resistant. It is homogeneous for resistance to soil-borne mosaic virus (based on field evaluation under heavy infection). The genes for resistance to Hessian fly, greenbug, and soil-borne mosaic were conferred by TA 1695, an accession of *Aegilops squarrosa* L. [syn. *T. tauschii* (Coss.) Schmal.] var. *strangulata* (collected by Kyoto University, Japan) obtained by the WGRC from the University of California, Riverside (1). The chromosome locations of the resistance genes and their allelic relationships with other D-genome genes are unknown. The pedigree of KS89WGRC4 is TA 1695/3* 'Wichita'; it is the bulk F₆ progeny of a single BC₂F₂ plant (2). In

the absence of soil-borne mosaic virus, KS89WGRC4 is similar to Wichita in height and overall phenotype.

Seed of KS89WGRC4 (5 g) is available upon written request. It is asked that appropriate recognition of source be given when these germplasms contribute 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

1. Gill, B.S., and W.J. Raupp. 1987. Direct genetic transfers from *Aegilops squarrosa* L. to hexaploid wheat. *Crop Sci.* 27:445-450.
2. Gill, B.S., W.J. Raupp, H.C. Sharma, L.E. Browder, J.H. Hatchett, T.L. Harvey, J.G. Moseman, and J.G. Waines. 1986. Resistance in *Aegilops squarrosa* to wheat leaf rust, wheat powdery mildew, greenbug and Hessian fly. *Plant Dis.* 70:553-556.
3. B.S. Gill, D.L. Wilson, and W.J. Raupp, Dep. of Plant Pathology; J.H. Hatchett, USDA-ARS and Dep. of Entomology; T.L. Harvey, Dep. of Entomology and Fort Hays Branch Exp. Stn.; 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. 90-341-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.