

Registration of KS96WGRC40 Hard Red Winter Wheat Germplasm Resistant to Wheat Curl Mite, Stagonospora Leaf Blotch, and Septoria Leaf Blotch

KS96WGRC40 (Reg. no. GP-559, PI 604225) is a hard red winter wheat (*Triticum aestivum* L.) with resistance to wheat curl mite, stagonospora leaf blotch and septoria leaf blotch developed cooperatively by the USDA-ARS, the Kansas Agricultural Experiment Station, and the Wheat Genetics Resource Center. It was released as a germplasm in August 1996.

The pedigree of KS96WGRC40 is KS93U69*2/TA 2397. KS93U69 is a sister line of KS90WGRC10 ('TAM 107'*3/TA 2460), and TA 2397 and TA 2460 are accessions of *Aegilops tauschii* Coss. collected near Sisiar in Afghanistan and Khoshyailagh in Iran, respectively. KS96WGRC40 was formed by bulking seed from six plants of the germplasm line KS95WGRC33 that showed high levels of resistance to the wheat curl mite (*Aceria tosichilla* Keifer). Wheat curl mites of the Wakeeney strain were used to infest 11-d-old seedlings at the rate of five mites per plant. Mite populations per plant 10 d later were as follows: TAM 107, 71.2; KS93U69, 53.3; TA2397, 0.0; KS96WGRC40, 6.2.

KS96WGRC40, like KS95WGRC33, is resistant to stagonospora and septoria leaf blotches [caused by *Stagonospora nodorum* (Berk.) Castellani & E.G. Germano and *Septoria tritici* Roberge in Desmaz., respectively] when inoculated as seedlings in the greenhouse and under natural infection in the field. Both germplasms had significantly longer green leaf duration than TAM 107 or KS93U69 in the field under septoria leaf-blotch infection at Parsons, KS, in 1993 and 1994, and under stagonospora leaf-blotch infection at Hutchinson and Manhattan, KS, and Laurel Springs, NC, in 1996. They had lower seedling-infection scores for both diseases than did TAM 107 in greenhouse tests at Manhattan. When inoculated in seedling experiments with a field-collected isolate of

Se. tritici from Riley County, Kansas, the germplasms had 4% of leaf area infected, compared with 28% for KS93U69, 41% for TAM 107, and 29% for 'Karl 92', the resistant check cultivar. In replicated tests in the greenhouse in 1995, seedlings of KS95WGRC33 inoculated with *St. nodorum* had 36% of leaf area infected, compared with 50.4% for TAM 107, and 23.5% for Jagger, the resistant check cultivar.

The wheat curl mite and leaf blotch resistance of KS96WGRC40 are derived from TA 2397. The genetic basis of the resistance has not been determined. KS96WGRC40 also carries the gene *Lr41* for resistance to leaf rust (caused by *Puccinia recondita* Roberge ex Desmaz.) from TA 2460 via KS93U69. It is similar to TAM 107 in days to heading, plant height, and general phenotype.

Small quantities (2 g) of seed of KS96WGRC40 are available upon written request. Appropriate recognition of source should be given when this germplasm contributes to research or development of a new breeding line or cultivar. Seed stocks are maintained by the Wheat Genetics Resource Center, Dep. of Agronomy, Throckmorton Plant Sciences Center, Kansas State University, Manhattan, KS 66506-5502.

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References and Notes

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