

THE WHEAT GENETIC & GENOMIC RESOURCES CENTER**Department of Plant Pathology, Throckmorton Hall, Manhattan, KS 66506-5502, USA.**<http://www.ksu.edu/wgrc>***Notice of release of KS08WGGRC50 wheat streak mosaic virus- and Triticum mosaic virus-resistant hard red winter wheat germ plasm.***

B.S. Gill, B. Friebe, L.L. Qi, D.L. Wilson, W.J. Raupp, A.K. Fritz, D.L. Seifers, T.J. Martin, and M.O. Pumphrey.

The Agricultural Research Service, U.S. Department of Agriculture and the Kansas Agricultural Experiment Station announce the release of KS08WGGRC50 hard red winter wheat germ plasm with resistance to wheat streak mosaic virus and *Triticum* mosaic virus for breeding and experimental purposes. Scientists participating in this development were B.S. Gill, B. Friebe, L.L. Qi, D.L. Wilson, and W.J. Raupp, Department of Plant Pathology, Kansas State University, Manhattan, Kansas; A.K. Fritz, Department of Agronomy, Kansas State University, Manhattan, Kansas; D.L. Seifers and T.J. Martin, Kansas State University, Agricultural Research Center, Hays, Kansas; and M.O. Pumphrey, USDA-ARS Plant Science and Entomology Research Unit, Department of Agronomy, Kansas State University, Manhattan, Kansas.

KS08WGGRC50 is an improved derivative of KS93WGRC27 with the resistance gene *Wsm1* in the form of a wheat-*Th. intermedium* recombinant chromosome T4DL·4DS-4Ai#1S (rec213). The recombinant chromosome consists of the long arm of wheat chromosome 4D, most of the short arm of 4D, and a shortened distal segment derived from the short arm of the *Th. intermedium* chromosome 4Ai#1 harboring *Wsm1*. *Wsm1* is temperature sensitive and confers resistance to wheat streak mosaic virus and *Triticum* mosaic virus at low temperature around 18°C, whereas at higher temperatures around 24°C *Wsm1* breaks down and is no longer effective. KS08WGGRC50 is derived from the cross KS93WGRC27/2*TA3809(CSph1b)//Wichita/3/2*Overley. The F₂-derived families are homozygous for *Wsm1* but are segregating for other traits.

Small quantities (3 grams) of seed of KS08WGGRC50 are available upon written request. We request that the appropriate source be given when this germ plasm contributes to research or development of new cultivars. Seed stocks are maintained by the Wheat Genetic and Genomic Resources Center, Throckmorton Plant Sciences Center, Kansas State University, Manhattan, KS 66506. Genetic material of this release will be deposited in the National Plant Germplasm System where it will be available for research purposes, including the development of new cultivars.

Development and characterization of wheat-Leymus racemosus translocation lines with resistance to Fusarium head blight.

B. Friebe, L.L. Qi, B.S. Gill, and P.D. Chen.

Working with scientists at Nanjing Agricultural University in China, we have identified a new source of resistance from the perennial grass relative *L. racemosus* (Lr). A chromosome segment (designated as 7Lr#1S) from this grass specifying resistance to FHB was transferred to a chromosome arm 7AL of wheat in the form of a translocation T7AL·7Lr#1S. This translocation stock was crossed twice with *ph1b* mutant stock. We screened 154 BC₁ plants from the cross 'T7AL·7Lr#1S / *ph1b*' using molecular markers to assay for *ph1b* and T7AL·7Lr#1S. Sixty-one plants were homozygous *ph1b/ph1b* and heterozygous for the translocation chromosome T7AL·7Lr#1S/7A. These plants were either backcrossed with Overley and Danby or selfed. We have developed a large, recombinant population of 1,400 BC₂ and more than 8,000 BC₁F₂ seeds. In homozygous *ph1b* genotypes, the alien 7Lr#1S arm with the gene(s) for FHB resistance is expected to recombine with homoeologous wheat arm 7AS. Meiotic pairing analysis in plants homozygous for *ph1b* and heterozygous for T7AL·7Lr#1S/7A failed to detect any metaphase I association in more than 500 PMCs, suggesting that the recovery of recombinants will be very difficult. Recently, a total of 1,150 BC₂ plants were screened using molecular markers, and three plants were found to be recombinants. Rec.124 is a proximal recombinant with the proximal 80% from 7Lr#1S and the distal 20% from 7AS. Two other recombinants, rec. 679 and rec.989, are distal recombinants with the proximal 80% from 7AS and the distal 20% from 7Lr#1S. These recombinants were confirmed by GISH indicating that the recovery of recombinants is possible, although at a very low frequency. These recombinants will be screened for scab resistance in the greenhouse. Our previous data indicated that a scab-resistance gene from *Ley-*