

- Knewton SJB, Carey EE, and Kirkham MB. 2010. Management practices of growers using high tunnels in the Central Great Plains of the United States of America. HortTech (submitted).
- Unger PW, Kirkham MB, and Nielsen DC. 2010. Water conservation for agriculture. *In: Advances in Soil and Water Conservation* (Schillinger W and Zobeck T, Eds). Soil Sci Soc Amer, Madison, WI (In press).
- Kirkham MB. 2010. Water dynamics in soils. *In: Soil Management: Building a Stable Base for Agriculture* (Hatfield JL and Sauer TJ, Eds). Soil Sci Soc Amer, Madison, WI (In press).

## THE WHEAT GENETIC & GENOMIC RESOURCES CENTER

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### ***Notice of release of KS11WGGRC53-J AND KS11WGGRC53-O leaf rust and stripe rust resistant hard red winter wheat germ plasms.***

The Agricultural Research Service, U.S. Department of Agriculture and the Kansas Agricultural Experiment Station announce the release of KS11WGGRC53-J AND KS11WGGRC53-O hard red winter wheat (*T. aestivum* L.) germ plasm with resistance to leaf rust and stripe rust for breeding and experimental purposes. Scientists participating in this development were Vasu Kuraparthi, Crop Science Department, North Carolina State University, Raleigh, NC 27695; Parveen Chunneja, Department of Genetics & Biotechnology, Punjab Agricultural University, Ludhiana, Punjab, India; Shilpa Sood, Crop Science Department, North Carolina State University, Raleigh, NC 27695; H.S. Dhaliwal, Biotechnology department, Indian Institute of Technology, Roorkee, Uttaranchal, India; Deven See, USDA-ARS Western Regional Small Grains Genotyping Laboratory, Washington State University, Pullman, WA 99164-6420; and Duane Wilson and B.S. Gill, Wheat Genetic and Genomic Resources Center, Department of Plant Pathology, Kansas State University, Manhattan, KS 66506.

KS11WGGRC53-J and KS11WGGRC53-O are derivatives of WL711 (TA5602) with the rust resistance genes *Lr57* and *Yr40* in the form of a wheat-goat grass (*Ae. geniculata*) recombinant chromosome T5DL·5DS·5M<sup>g</sup>S(0.95). The recombinant chromosome consists of the long arm of wheat chromosome 5D, most of the short arm of 5D, and a small distal segment derived from the short arm of the *Ae. geniculata* chromosome 5M<sup>g</sup> harboring *Lr57* and *Yr40*. KS11WGGRC53-J is derived from the cross 'WL711 (T5DL·5DS·5M<sup>g</sup>S(0.95))/3\*Jagger'. KS11WGGRC53-O is derived from the cross 'WL711 (T5DL·5DS·5M<sup>g</sup>S(0.95))/3\*Overley'. The F<sub>4</sub>-derived families are homozygous for *Lr57* and *Yr40* but segregating for other traits.

Small quantities (3 grams) of seed of KS11WGGRC53-J and KS11WGGRC53-O 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.

### ***Notice of release of KS11WGGRC54-J and KS11WGGRC54-O leaf rust resistant hard red winter wheat germ plasms.***

The Agricultural Research Service, U.S. Department of Agriculture and the Kansas Agricultural Experiment Station announce the release of KS11WGGRC54-J and KS11WGGRC54-O hard red winter wheat (*T. aestivum* L.) germ plasm with resistance to leaf rust for breeding and experimental purposes. Scientists participating in this development were Vasu Kuraparthi, Crop Science Department, North Carolina State University, Raleigh, NC 27695; Parveen Chunneja, Department of Genetics & Biotechnology, Punjab Agricultural University, Ludhiana, Punjab, India; Shilpa Sood, Crop Science Department, North Carolina State University, Raleigh, NC 27695; H.S. Dhaliwal, Biotechnology department, Indian Institute of Technology, Roorkee, Uttaranchal, India; Gina Brown-Guedira, USDA-ARS, Small Grains Genotyp-

ing Laboratory, North Carolina State University, Raleigh, NC 27695; and Duane Wilson and B.S. Gill, Wheat Genetic and Genomic Resources Center, Department of Plant Pathology, Kansas State University, Manhattan, KS 66506.

KS11WGGRC54-J and KS11WGGRC54-O are improved derivatives of WL711 (TA5605) with the rust resistance gene *Lr58* in the form of a wheat-*Ae. triuncialis* recombinant chromosome T2BS-2BL-2'L(0.95). The recombinant chromosome consists of the short arm of wheat chromosome 2B, most of the long arm of 2B, and a small distal segment derived from the long arm of the *Ae. triuncialis* chromosome 2'L harboring *Lr58*. KS11WGGRC54-J is derived from the cross 'WL711 (T2BS-2BL-2'L(0.95))/3\*Jagger'. KS11WGGRC54-O is derived from the cross 'WL711 (T2BS-2BL-2'L(0.95))/3\*Overley'. The F<sub>4</sub>-derived families are homozygous for *Lr58* but segregating for other traits.

Small quantities (3 grams) of seed of KS11WGGRC54-J and KS11WGGRC54-O 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.

**Evaluation of wild wheat lines in the field for various foliar diseases.**

Duane L. Wilson, Bikram S. Gill, and W. John Raupp.

We evaluated a collection of *Triticum monococcum* subsp. *monococcum* in the field at Manhattan, Kansas, during the spring of 2010 for leaf rust, stripe rust, and barley yellow dwarf virus; heading dates also were recorded (Table 1, pp. 238-242). We also evaluated a representative sample of accessions from the primary and secondary gene pools (Table 2, pp. 242-245). Field plots at the Rocky Ford Research Area north of Manhattan were inoculated on 7 May with a mixture of leaf rust and stripe rust spores. Spores were in a suspension of oil and mist applied in late evening. The leaf rust culture used is referred to as 'Lr Composite'. This culture is a composite of the following cultures: 2003 wild culture, 2007 wild culture, and PRTUS3, 6, 42, 50, and 52. The stripe rust culture is referred to as 'PST-100'. These cultures were kindly supplied by Dr. Bob Bowden, USDA-ARS, Manhattan, Kansas. Infection type was described using the Cobb scale and visual assessment. The Cobb scale is a combination of the percent of leaf area covered by rust and the pustule size. The number in the score is the percentage of leaf area covered by pustules, which could be from 1 to 100. The second part of the scoring are letter designations for size of pustules present as follows: 0 = no infection visible, R = resistant or very small pustules, MR = moderately resistant or small pustules, M = moderate or intermediate reaction, pustules larger, MS = moderately susceptible or large pustules, and S = susceptible with very large pustules in both diameter and height of the pustule. For example, an IT of 10R indicates 10 percent of the leaf area infected with very small pustules, 40M indicates 40 percent of the leaf area infected with moderate to larger pustules, and 60MS indicates 60 percent of the leaf area infected with large pustules. Plants were artificially inoculated with cultures mentioned but most likely, natural infection also occurred. Commonly, leaf rust and occasionally stripe rust are present in the wheat plots at the experiment station.

**Table 1.** Field observations on a *Triticum monococcum* subsp. *monococcum* collection for leaf rust, stem rust, barley yellow dwarf virus, and heading date in 2010. For most accessions, at least two replications were evaluated. TA# indicates the accession number in the Wheat Genetic and Genomic Resources Center Gene Bank. The leaf and strip rust screening data is described in detail on p. 238. For barley yellow dwarf incidence; H = high, M = medium, L = low, and 0 = no disease; — = missing data. The country of origin for the accession is listed if known.

TA #	Leaf rust		Stripe rust		Barley yellow dwarf		Heading date	Country of origin
	26/5/10	2/6/10	26/5/10	2/6/10	13/5/10	26/5/10		
136	30R	30MR	0	5R	M	H	31/5	Sweden
	10R	10R	1R	5R	H	H	31/5	
137	5R	20MR	0	5R	M	M	2/6	Turkey
	30R	30MR	5R	10MR	H	H	1/6	
138	5R	15MR	0	1R	L	M	16/5	USA
	30R	30MR	5R	10MR	L	L	23/5	
	15MR	15MR	5MR	10MR	L	M	16/5	
139	1R	20MR	0	5MR	L	M	2/6	USA
	10R	10R	0	1R	H	H	5/6	
141	1R	15MR	0	1R	L	M	3/6	Unknown
	15R	15MR	0	5R	L	M	3/6	
	10R	25R	0	1R	0	L	4/6	