NEW VARIETIES AND GERMPLASM

The following is only a partial list of new wheat varieties and germplasms available in the region. Included are those for which we have current information.

VARIETIES

The Nebraska Agricultural Experiment Station and USDA-ARS announced the release of 'Alliance' hard red winter wheat in cooperation with the South Dakota Agricultural Experiment Station. Alliance (P.I. 573096) has the pedigree 'Arkan/Colt//Chisholm' and was tested in the SRPN in 1991 and 1992, and NRPN in 1993, as NE88595. Alliance is targeted for dryland production in the Nebraska panhandle. It possesses moderate resistance to stem rust (Sr17, which is no longer effective, plus other genes which are effective) and may possess H3 gene for resistance to Hessian fly. Alliance is susceptible to leaf rust and has winterhardiness similar to Scout 66 and superior to Vona, TAM-200, and Rawhide. It averages 1.5 days earlier in anthesis date compared to Arapahoe and Redland. Alliance is similar in test weight to Arapahoe and superior to Redland. Dough mixing properties are similar to Arapahoe and baking properties considered as acceptable.

The Kansas Agricultural Experiment Station and USDA-ARS announced the release of 'Ike' hard red winter wheat in cooperation with the Nebraska Agricultural Experiment Station. Ike has the pedigree 'Dular/Eagle//2* Larned/Cheney/3/Colt' and was tested in the SRPN in 1992 and 1993 as KS89H48-1. Ike is a tall semidwarf targeted for western Kansas production. It has coleoptile length similar to Newton and winterhardiness similar to Larned. Ike carries effective levels of resistance to leaf rust, stem rust, Hessian fly, SBMV, and WSSMV; it is susceptible to WSMV. Ike heads approximately 5 days later than TAM-107 and 1 day earlier than Larned. Milling and baking properties are similar to Larned, except that Ike has stronger mixing requirements.

The Texas Agricultural Experiment Station announced the release of TAM-300 hard red winter wheat. TAM-300 has the pedigree 'TAM-106/Collin' and was tested in the 1990 and 1991 SRPN under the designation TX86D1332. The majority of plants in TAM-300 possess the leaf rust resistance genes Lr1, Lr10, and Lr16; however, some plants possess only genes Lr2a and Lr24. TAM-300 is resistant to soil-borne mosaic virus, moderately resistant to stem rust, moderately susceptible to septoria tritici and powdery mildew. At Dallas, TX heading of TAM-300 is similar to Thunderbird, and slightly later than Siouxland 89 and 2163. TAM-300 has shown high test weight patterns and good overall baking quality. It is primarily adapted to the Blacklands of Texas.

AgriPro Bioscience announced the release of 'Hickok' hard red winter wheat. Hickok has the pedigree 'TX81V6610/W82-163' and is entered in the 1994 SRPN under the designation WI89-273-13. Hickok is a daylength sensitive, short semidwarf with early maturity. It is resistant to soilborne and spindle streak mosaic viruses and is resistant to current races of leaf rust. Hickok is moderately susceptible to Septoria tritici and is

susceptible to wheat streak mosaic virus. Hickok has high test weight patterns and overall milling and baking quality is excellent. Plant height and straw strength are adequate for most aquifer production conditions. Hickok is well adapted to eastern Colorado, central and western Kansas, southern Nebraska, central and western Oklahoma, and the high plains and rolling plains of Texas.

GERMPLASMS

The Plant Sciences and Water Conservation Laboratory, USDA-ARS, Stillwater, OK, announced the release of two semi-dwarf hard red facultative wheats STARS-9302W and STARS-9303W possessing resistance to the Russian wheat aphid. Both lines were derived from the cross 'Bobwhite/PI149898'. PI149898 was initially thought to be a triticale, but cytogenetic analyses have indicated that this line is, in fact, a wheat. Inheritance of resistance appears to be controlled by at least two genes. The mechanisms of resistance are tolerance and antibiosis.

The USDA-ARS, Kansas Agricultural Experiment Station, and the Wheat Genetics Resources Center at KSU announced the release of several hard red winter wheat germplasms in 1993:

KS92WGRC17, KS92WGRC18, KS92WGRC19, and KS92WGRC20 are Hessian fly resistant hard red winter wheat germplasms. These germplasms carry the H25 gene for resistance to Hessian fly. The gene is located on chromosome arm 6RL from the rye cultivar Balbo, and three different translocations are present among the four germplasms. KS92WGRC17 carries almost the complete arm of 6RL translocated to the long arm of 6B. KS92WGRC18 and 19 each carry a smaller segment of 6RL translocated to the long arm of 4B. A second translocation, T1AL/1RS, is absent from KS92WGRC18 and present in KS92WGRC19. KS92WGRC20 carries a very short segment of 6RL as an intercalary translocation in the proximal region of 4AL.

KS92WGRC26 is a hard red winter wheat germplasm derived from the cross 'Karl*3/TA2473', where TA2473 is an accession of *Triticum tauschii*. It carries a single, dominant gene for resistance to Hessian fly located on chromosome 4D. The gene segregates independently of all other known resistance genes. KS92WGRC26 is similar to Karl in height, heading date, disease reactions, and overall phenotype.

KSWGRC27 is a wheat streak mosaic virus resistant hard red winter wheat germplasm derived from the cross 'CI17884*4/Karl'. CI17884 is a T. aestivum germplasm homozygous for T7AS-7SS:7SL T. aestivum-T. Speltoides, T4DL:4Ai#2S T. aestivum-Agropyron intermedium chromosome translocations. The 4Ai#2S chromosome arm has the gene Wsm1 that conditions effective levels of resistance to WSMV.

KSWGRC28 is powdery mildew resistant hard red winter wheat germplasm derived from the cross 'MS6RL(6D)/TAM-104'. MS6RL(6D) is a monosomic 6RL(6D) wheat-rye chromosome substitution line with the rye chromosome line derived from the rye cultivar 'Prolific'. KS93WGRC28 is homozygous for the recombined T6BS:6RL translocated chromosome and carries the gene Pm20 which conditions resistance to powdery mildew.