WASHINGTON AGRICULTURAL RESEARCH CENTER
Washington State University
Pullman, Washington

and

OREGON AGRICULTURAL EXPERIMENT STATION
Oregon State University
Corvallis, Oregon

and

IDAHO AGRICULTURAL EXPERIMENT STATION
University of Idaho
Moscow, Idaho

and

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Washington, D.C.

RELEASE OF WAKANZ (PI506352), A HESSIAN FLY RESISTANT SOFT WHITE SPRING WHEAT

The Washington Agricultural Research Center, the Oregon Agricultural Experiment Station, and the Agricultural Research Service, USDA, announce the release of Wakanz, PI506352, a hessian fly resistant soft white spring wheat (Triticum aestivum L.) to certified seed growers. Wakanz was developed by the Washington Agricultural Research Center, Pullman, Washington, with the cooperation of the Agricultural Research Service of the United States Department of Agriculture, and the Oregon Agricultural Experiment Station.

The purpose of the release is to provide growers with a soft white which carries genetic protection against losses caused by the hessian fly. As such, Wakanz will be of particular interest to growers using conservation tillage practices as minimum tillage and direct drilling.

Wakanz was selection No. HF820055 from the cross K78504/K79129-33// K7806645, made at Pullman in 1980. Breeding was advanced significantly through four cycles of increase, evaluation and selection, with field evaluations in Washington State and alternately in New Zealand, through the cooperation of the Crops Research Division of the Department of Scientific and Industrial Research, Lincoln, Christchurch, New Zealand. Wakanz has been evaluated in Washington State and in the Western Regional and Tri-State Nurseries since 1983. Extensive mass selection and reselection were employed to assure the breeder seed stock is free of red seed color contaminants. Wakanz appears to be widely adapted to production conditions

in the Pacific Northwest. The variety carries a single semidwarfing gene (either Rht1 or Rht2) and has shown good resistance to lodging. Wakanz appears to have a good combination of height for dry land, high rainfall and irrigated production.

Wakanz carries hessian fly resistance gene H_3 derived from Arthur through its parents K78504 = Tifton 3725/Walladay^3 and K79129-33 = K7400195/ Arthur 71. Tifton 3725, an Arthur derivative from the Georgia Experiment Station, was initially selected as a leaf rust resistant parent from among lines tested via the Eastern Soft Red Winter Wheat Nursery. Hessian fly resistance screening and evaluation which identified its gene H_3 resistance was carried out at Kansas State University, Manhattan, Kansas, by Dr. J. M. Hatchett, Entomologist, ARS/USDA, and to the local hessian fly population at Prosser, Washington, by Dr. K. Pike, WSU entomologist.

Wakanz has inherited a broad base of disease resistance. It is moderately resistant in the adult plant stage of stripe rust caused by Puccinia striiformis, but is susceptible in the seedling stage. It is also resistant to locally prevailing forms of leaf rust, caused by Puccinia recondita and appears to carry resistance to local forms of stem rust caused by P. graminis, but only scant data are available. Wakanz is moderately susceptible to mildew, caused by Erisiphe graminis tritici, and while it may carry some genes for resistance to common bunt, caused by Tilletia tritici, it should be considered susceptible to that disease. Wakanz showed a moderate level of tolerance to dry land foot rot caused by Fusarium culmorum.

Wakanz is mid-season in maturity. It is two days later heading than Penawawa and three days later than Edwall, about five days earlier than Urquie. The spike is held nearly erect, but tends to bend toward maturity and the awns are medium long and the glumes are white. The kernels are white, soft, and medium long and ovate, with smooth cheeks, a mid-depth crease and medium size brush. The germ size is medium. The grain of Wakanz has a higher test weight than Edwall, equalling that of Waverly.

Collaborative tests by the Western Wheat Quality Laboratory, ARS/USDA, Pullman, Washington, have shown Wakanz to have satisfactory to good soft white wheat milling and baking properties. Wakanz is primarily a pastry wheat, but will be used in all soft white wheat flour products.

Seed classes of Wakanz will be breeder, foundation, registered, and certified. These seed classes will be produced by the Washington State Crop Improvement Association, N. 513 Front St., Yakima, WA, 98501, and the Oregon State Crop Improvement Association.

The proposed date of release is April 1, 1988.