

THE KANSAS AGRICULTURAL EXPERIMENT STATION
MANHATTAN, KANSAS

AND

THE UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE

KANSAS STATE UNIVERSITY
MANHATTAN, KANSAS 66506

NOTICE OF RELEASE OF KS85WGRC01 HESSIAN FLY-RESISTANT
HARD RED WINTER WHEAT GERMPLASM

The Kansas Agricultural Experiment Station, the Agricultural Research Service, U. S. Department of Agriculture, and the Wheat Genetic Resources Center (WGRC) at Kansas State University announce the release of KS85WGRC01 hard red winter wheat (Triticum aestivum L.) germplasm (PI499691) for breeding and experimental purposes. Scientists participating in this development were B. S. Gill, Dept. of Plant Pathology, J. H. Hatchett, USDA-ARS and Dept. of Entomology, T. S. Cox, USDA-ARS and Dept. of Agronomy, R. G. Sears, Dept. of Agronomy, and T. J. Martin, Hays Branch Experiment Station.

KS85WGRC01 is homozygous for resistance to Hessian fly [Mayetiola destructor (Say)]. The resistance, conditioned by a single dominant gene is derived from Ae. squarrosa (T. tauschii) accession TA1644, collected in Iran. The gene is independent of H13, the only other named Hessian fly-resistance gene known to be in the D-genome, and is effective against the known biotypes of the Hessian fly.

KS85WGRC01 is a bulk of seven F_5 -derived F_7 lines from the cross TA1644/'Newton'/'Wichita'. The cross TA1644/Newton was made using an embryo rescue technique, and the self-sterile F_1 plants were crossed with Wichita. A single BC_1 plant had chromosome number $2n=49$ and was fertile. Resulting F_2 plants were screened using biotype D of Hessian fly, and four resistant plants (83-571, 83-573, 83-575 and 83-577) were selfed. Progeny with good appearance and carrying 42 chromosomes were advanced, and seven F_5 -derived F_6 families were homozygous resistant to biotype D. Selfed seed from these seven lines was bulked to form KS85WGRC01.

Based on replicated field evaluation of sibling lines, KS85WGRC01 is heterogeneous for characters other than Hessian fly resistance. It is, on average, of the same or slightly earlier maturity than Newton, and 10 cm taller. It segregates for soilborne mosaic virus resistance, and has a reaction to leaf diseases similar to that of Newton. It is cytogenetically stable.

Small quantities of seed of KS85WGRC01 are available upon written request. It is requested that appropriate recognition of source be given when this germplasm contributes to research or development of new cultivars. Seed stocks are maintained by the Wheat Genetic Resources Center, Dept. of Plant Pathology, Throckmorton Hall, Kansas State University, Manhattan, KS 66506.

Requests to B S Gill

Kurt C. Feltner
Director,
Kansas Agricultural Experiment Station

October 1, 1985
Date

M. E. Carter
Administrator
Agricultural Research Service

OCT 25 1985
Date