

UNITED STATE DEPARTMENT OF AGRICULTURE
 AGRICULTURAL RESEARCH SERVICE
 WASHINGTON, D. C.

AND

WASHINGTON AGRICULTURAL RESEARCH CENTER
 WASHINGTON STATE UNIVERSITY
 PULLMAN, WASHINGTON

AND

OREGON AGRICULTURAL EXPERIMENT STATION
 OREGON STATE UNIVERSITY
 CORVALLIS, OREGON

RELEASE OF RELY (PI 542401) A SOFT WHITE CLUB WINTER WHEAT CULTIVAR

The Agricultural Research Service, U.S. Department of Agriculture, the Washington Agricultural Research Center, Idaho Agricultural Experiment Station and the Oregon Agricultural Experiment Station announce the joint release of 'Rely', a soft-white club winter wheat (*Triticum aestivum* L.) cultivar. Rely was developed by the cooperative Federal - State research program at Pullman, Washington.

Rely is a multiline cultivar developed by R.E. Allan and is intended to replace Crew multiline. It comprises 10 lines derived from crosses:

Tres/Tyee (2 lines), Tres//SU92/6*OM/WST/2*OM (1 line), Tres//SU92/6*OM/S2629/3*OM (2 lines), Tres//SU92/6*OM/Ibis/2*OM (1 line), Tres//CI013253/5*OM/MS/2*OM (2 lines), Tres//SU92/6*OM/DC/3*OM (1 line), and Tres/Cappelle (1 line). The 10 lines are F₂ derived F₇ lines. They were blended together by weight in equal amounts to produce breeder's seed of Rely. All components are awnless-white glume *Rht*₂ semidwarfs with kernels that are white, short, soft, ovate; germ small; crease midwide, shallow; cheeks rounded; brush midlong to short.

Rely is heterogeneous for resistance to diseases caused by *Puccinia striiformis*, *P. recondita*, and *Erysiphe graminis*. Among the components of Rely, 7 to 10 have race-specific resistance to the currently predominant biotypes of *P. striiformis*. Seven of the components are uniform or heterogeneous for resistance to stripe rust biotypes that attack the resistance gene of Tres. Tests indicate that Rely usually expresses higher field resistance to stripe rust than the multiline Crew. In four 1990 tests, Rely had 8 to 18% less stripe rust on its flag leaves when compared to those of Crew. Rely is susceptible to pathogens causing dwarf bunt, cephalosporium stripe and stem rust; it is moderately susceptible to the strawbreaker fungus.

The grain yields of Rely have generally been comparable to other club cultivars. In 32 state of Washington trials (1986 to 1989) Rely, Tres, Crew, and Hyak had mean yields of 5500, 5550, 5270, and 5340 Kg/Ha, respectively.

In 24 regional 1987 to 1989 tests in Oregon, Idaho and Montana, Rely, Tres, Hyak and Moro had mean yields of 5920, 6060, 5860, and 4850 Kg/Ha, respectively. Rely has a mean grain volume weight averaging 0.8 to 1.8 Kg/Hl heavier than Hyak and Moro, respectively. Rely is very similar to Tres and Crew for plant height, straw strength, seedling vigor, and coldhardiness.

Based on quality evaluations conducted on the 1987 to 1989 regional trials, Rely has milling and baking quality that is comparable to most currently grown club wheat cultivars. It is equal to Tres, Moro, and Hyak for flour yield, milling score, flour ash, sponge cake score, cake volume and noodle score. It is similar to Tres and Hyak but lower than Moro for percent flour protein and absorption. Rely is equal to Tres and Moro yet lower than Hyak for both absorption and cookie diameter.

Rely may be grown in the traditional club wheat production areas of northwestern USA.

Breeder and foundation seed will be maintained by the Washington State Crop Improvement Association under supervision of the Agronomy and Soils Department, Washington Agricultural Research Center. ARS/USDA has no seed for distribution. The proposed release date for publicity shall be on the date of final signature of the release notice.

M. E. Carter

M. E. Carter
Administrator for Agricultural Research Service
United States Department of Agriculture
Washington, D. C.

JUL 18 1991

Date

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James J. Zwick
Director
Washington Agricultural Research Center
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7-1-91

Date

V. V. Volk

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Date



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SUBJECT: Variants in Rely Winter Club Wheat

TO: Washington State Crop Improvement Association

FROM: R.E. Allan, Research Geneticist

The following variants may be found in Rely winter club wheat, and should be considered permissible for the variety:

White Common Awnless
White Common Awned
White Club Awned

Both common spike and awnedness are inherited as recessive traits. It is likely that out-crossing occurred 2 years or generations ago and explains why you see more of these recessive variants this season than last year.

I understand that an attempt is being made to re-establish the lines, which constitute Rely with the goal of reducing the number of variants found.

