

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

AND

WASHINGTON AGRICULTURAL RESEARCH CENTER  
WASHINGTON STATE UNIVERSITY  
PULLMAN, WASHINGTON

AND

IDAHO AGRICULTURAL EXPERIMENT STATION  
UNIVERSITY OF IDAHO  
MOSCOW, IDAHO

AND

OREGON AGRICULTURAL EXPERIMENT STATION  
OREGON STATE UNIVERSITY  
CORVALLIS, OREGON

RELEASE OF MADSEN (PI 511673) A SOFT WHITE COMMON 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 'Madsen', a soft-white common winter wheat (Triticum aestivum L.) cultivar. Madsen was developed by the cooperative Federal - State research program at Pullman, Washington, and named in honor of former Dean of the College of Agriculture of Washington State University, the late Louis L. Madsen.

R. E. Allan selected Madsen as a F<sub>2</sub> derived F<sub>3</sub> line in 1980 from the cross VPm1/Moisson951//2\*Hill 81. Madsen is a one-gene semidwarf (Rht<sub>1</sub>) that heads mid-early with fully awned spikes. It is heterogeneous for white and light tan glumes yet has white straw. Its kernels are white, large, soft, ovate with a medium germ.

Madsen has resistance to strawbreaker foot rot. It has expressed field resistance to the currently prevalent northwestern USA races of stripe, leaf and stem rust. Madsen is moderately susceptible to flag smut, cephalosporium stripe, and powdery mildew. It has resistance to a few races of the common bunt fungus but it is susceptible to dwarf bunt.

Madsen is the first USA soft white common winter wheat with notable resistance to strawbreaker foot rot. In 1981 to 1986 foot rot inoculated yield trials, Madsen had a mean yield loss of 7%; compared to 17 to 33% losses for Stephens, Daws, and Nugaines. The 6 year mean yield of Madsen in the foot rot inoculated yield tests was 7670 kg/ha vs 4580 to 5180 kg/ha for Nugaines, Daws and Stephens. Madsen has generally had moderately high yields when foot rot is not a factor. In 75 Washington State trials, the mean

yields of Madsen, Stephens, Nugaines, Daws and Lewjain have been 4840, 4350, 4470, 4790 and 5000 kg/ha, respectively. In regional trials outside Washington State, Madsen has varied in its yield potential. In 24 such trials Madsen, Nugaines, Stephens and Dusty produced mean yields of 5590, 4850, 5520, 5650 kg/ha, respectively.

The grain volume weight of Madsen averages about 1.9 kg/hl less than Nugaines and 1.3 kg/hl more than Stephens. It has an average plant height of 80 cm vs. 79, 75 and 77 for Daws, Stephens and Lewjain, respectively. Straw strength of Madsen exceeds Lewjain and Dusty but is less than Stephens. Madsen has a tendency to shatter. It has seedling emergence properties that are superior to Daws but less than Stephens. Madsen has not suffered appreciable winter injury during its testing period in Washington State trials. A crown freeze test indicated Madsen was similar to Stephens for coldhardiness. Occasionally Madsen exhibits a few open florets and partial male sterility.

Tests by the USDA-ARS Western Wheat Quality Laboratory have rated Madsen as promising to particularly promising for overall quality traits. It has also been rated promising in the Pacific Northwest Collaborator Tests. Madsen usually rates above Nugaines and Stephens for cookie diameter, sponge cake score and cake volume. It equals and exceeds the noodle scores of Nugaines and Stephens, respectively.

Madsen may be grown on the northwestern USA where strawbreaker foot rot and the rusts are production limitations. It may perform less well in areas where problems with cold injury and stand establishment occur.

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.

*T. B. Kenney*

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

JAN 7 1988

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Date

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Director  
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12-16-87

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Date



# WASHINGTON STATE CROP IMPROVEMENT ASSOCIATION

509-248-3240, Fax 509-452-0616

114 North 5th Avenue  
Yakima, Washington 98902-2642

August 24, 1994

TO: Oregon Seed Certification  
Attention: Ron Cook

FROM: Keith Pfeifer *KP*

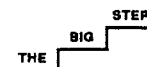
RE: **Madsen Winter Wheat**  
Rod Winter wheat

Results of sodium hydroxide exams of Madsen and Rod winter wheat seed lots indicate varying amounts of red wheat. Until further notice, WSCIA will certify registered or certified class seed lots of Madsen and Rod winter wheat having up to a maximum of 20 seeds/lb of red wheat.

/ggg



PLANT CERTIFIED SEED



TO INCREASED PRODUCTION