Registration of ‘Boundary’ Wheat

‘Boundary’ hard red winter wheat (Triticum aestivum L.) (Reg. no. CV-864, PI 603039) was released in 1997 by the Idaho Agricultural Experiment Station and the USDA-ARS. Boundary is a semidwarf wheat adapted to high-yield production zones of the Pacific Northwest area of the United States.

Boundary is a selection from a 1986 cross, A86115W, with the parentage A76327W-2-3T-5P/A7457W-13-1-T-2P. The breeding line A76327W-2-3T-5P was derived from the cross ‘Norin 10’/‘Brevor’/2*Centana’, IDO34/3/Chr14106.T. The breeding line A7457W-13-1-T-2P had the pedigree: II60-155/Chr14106/‘McCall’/4*‘Kiowa’/UT222a-437-2/‘Delmar’/3/PI 476212/MT6619. A86115W was bulk advanced through the F3 generation. In 1988, F2 head selections were made in Aberdeen, ID for resistance to common bunt (caused by Tilletia tritici (Bjerk.) G. Wint. in Rabenh.). Selected F3 seed was planted at Aberdeen in 1989, from which the line A86115W-2 was selected and entered into yield testing in southern Idaho. In 1993, A86115W-2 was identified in advanced trials at Preston and Teton, ID as tolerant to snow mold (caused by Typhula spp.). Based on this evaluation, A86115W-2 was advanced to regional testing in 1994 under the designation Idaho 467. Idaho 467 was tested in the Western Regional Nursery from 1994 to 1996 and the Northern Regional Performance Nursery in 1996 and 1997. Pure lines derived from 100 F3 heads of Idaho 467 were evaluated for uniformity of resistance to T. controversa Kühn in Rabenh. (the causal organism of dwarf bunt) for 2 yr at Logan, UT. In 1996, 56 of these lines, evaluated as resistant to dwarf bunt, were bulked to form breeder seed for Boundary.

Boundary has a prostrate juvenile growth habit with blue green foliage and no waxy bloom. The flag leaves of Boundary are erect with auricles that are glabrous and green to yellow green in color. The heads of Boundary are dense, clavate, and awnless. Boundary’s glumes are long, medium wide, with a squared shoulder shape, and an acute beak. Boundary flowers moderately late, approximately 260 d after planting, 2 d earlier than ‘Bonneville’ and 2 d later than ‘Manning’. When irrigated, Boundary’s mature height is approximately 90 cm, 20 cm taller than ‘Garland’ and 5 cm shorter than Manning. At maturity, Boundary has white chaff color. Seed of Boundary is ovate in shape, with rounded cheeks, and a medium long brush. The seed crease is narrow and shallow in depth. Boundary is moderately resistant to dwarf bunt, similar to the cultivars ‘Ellan’ and ‘Fairview’. In 3 yr of Western Regional Testing in Idaho and Washington, Boundary had adult plant resistance to stripe rust (caused by Puccinia striiformis Westend.) when inoculated with races CDL37, CDL43, and CDL45, but had seedling susceptibility to the same races. In the same trials, Boundary had resistance to Pacific Northwest races of leaf rust (caused by P. recondita Roberge ex Desmaz. f. sp. tritici) and powdery mildew [caused by Erysiphe graminis DC. f. sp. tritici Ém. Marchal; syn. Blumeria graminis (DC.) E.O. Speer]. Boundary is tolerant to snow mold, similar to ‘Blizzard’.

‘Boundary’ has good quality characteristics. Milling quality of Boundary to lodging than most dryland hard red winter adapted wheats Garland and Ute. Based on milling evaluations by the University of Idaho Wheat Quality Laboratory, Boundary is a high-quality wheat with superior milling characteristics compared with Weston. Boundary had 63% better mixing tolerance, but 8% smaller loaf volume. Compared with Weston, Boundary had 63% and 13% better mixing tolerance, but 8% smaller loaf volume.

Seed of Boundary will be maintained by the Idaho Foundation Seed Program and may be obtained from the Foundation Seed Director, University of Idaho Research and Extension Center, Kimberly, ID 83341.

E. SOUZA,* J. M. WINDESS

References and Notes


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Registration of ‘Jefferson’ Wheat

‘Jefferson’ hard red spring wheat (Triticum aestivum L.) CV-865, PI 603040) was released in 1998 by the Washington Agricultural Experiment Station in cooperation with the Oregon and Idaho Agricultural Experiment Stations and the USDA-ARS. Jefferson is a semidwarf wheat adapted to dryland production at elevations above 1200 m. It has good milling quality.

Jefferson was derived from the cross A8541S with the expanded pedigree ‘Mengavi’/‘8156’/‘Norin 10’/‘Frontana’/Kenya 58’/‘Norin 10’/‘Brevor’/3/‘Thatcher’/5/‘Ute’. Jefferson is a stiff-strawed cultivar, resistant to lodging than most dryland hard red winter adapted wheats Garland and Ute. Based on milling evaluations by the University of Idaho Wheat Quality Laboratory, Boundary has good quality characteristics. Milling in 22 site-years of southeastern Idaho trials was similar to Weston. Compared with Weston, Boundary had 63% and 13% better mixing tolerance, but 8% smaller loaf volume.

Seed of Boundary will be maintained by the Idaho Foundation Seed Program and may be obtained from the Foundation Seed Director, University of Idaho Research and Extension Center, Kimberly, ID 83341.


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