Registration of ‘AC Barrie’ wheat

‘AC Barrie’ hard red spring wheat (Triticum aestivum L.) (Reg. no. CV-830, PI 593658) was developed at the Semiarid Prairie Agricultural Research Centre, Agriculture and Agri-Food Canada, Swift Current, SK. Because of its high grain yield, high protein concentration, and favorable production traits, it was released in 1994. Its name was chosen to honor Barrie Campbell, the wheat breeder (retired) with Agriculture and Agri-Food Canada who developed the parents of AC Barrie.

AC Barrie was selected from the cross ‘Neepawa’/‘Columbus’/BW90 (1,2,3) made in 1984, using a modified pedigree breeding procedure. The F2 seed was inoculated with common bunt (caused by Tilletia laevis Kühn in Rabenh. and T. caries (DC.) Tul. & C. Tul.), and grown as individual plants in a leaf rust (caused by Puccinia recondita Roberge ex Desmazz.) and stem rust (caused by P. graminis Pers.:Pers.) epiphytotic nursery. The F3, F5, and F7 generations were grown as headrows in a winter nursery near Brawley, CA, to multiply seed for early-generation yield tests. Agronomic performance of experimental lines was measured in the F4, F6, and F8 generations in replicated trials at two locations. A seed sample from the yield trials was used to assess grain quality and kernel characteristics. An F6:F8 line, designated as 8405-BK3C, was evaluated in preliminary registration trials in 1989 and 1990; and, designated as BW661, in the Western Bread Wheat Cooperative tests from 1991 to 1993. It received Registration no. 3980 from the Food Production and Inspection Branch, Agriculture and Agri-Food Canada, on 16 Aug. 1994.

In 3 yr of testing in the Western Bread Wheat Cooperative Test, the average yield of AC Barrie (3960 kg ha⁻¹) was 6% more than Neepawa and ‘AC Eatonia’, 4% more than ‘Katepwa’, and 1% less than ‘Laura’. The yield advantage of AC Barrie was greater at locations in the Dark Brown soil zone than locations in the Brown soil zone. In the 1993 Central Bread Wheat Cooperative Test, the yield of AC Barrie (3550 kg ha⁻¹) exceeded Neepawa by 16%, Katepwa by 10%, and Columbus by 6% and was similar to that of ‘Roblin’.

When averaged over the 3 yr in the Western Bread Wheat Cooperative Test, the protein concentration of AC Barrie (162 g kg⁻¹ dry matter basis) was as follows: 5.8 g kg⁻¹ greater than Laura, 4.6 g kg⁻¹ greater than Neepawa and Katepwa, and 3.5 g kg⁻¹ greater than AC Eatonia. In the 1993 Central Bread Wheat Cooperative Test, the protein concentration of AC Barrie (164 g kg⁻¹) was 12.7 g kg⁻¹ greater than Katepwa, 10.4 g kg⁻¹ greater than Neepawa, 3.5 g kg⁻¹ greater than Columbus, and similar to that of ‘Roblin’.

The average time-to-maturity of AC Barrie (108 d) is 1 to 3 d longer than Neepawa and Katepwa, 2 d earlier than Columbus, and slightly earlier than Laura. AC Barrie has shorter and stronger straw (93 cm) than all check cultivars in the Western and Central Bread Wheat Cooperative Tests except Roblin. It has a larger kernel (36 mg kernel⁻¹) and higher grain volume weight (799 kg m⁻³) than other cultivars.

The Subcommittee on Grain Quality of the CROP registrations Committee of Grain rated AC Barrie eligible for registration.

Registration of ‘AC Karma’ wheat

‘AC Karma’ hard white spring wheat (Triticum aestivum L.) (Reg. no. CV-831, PI 593659) was developed at the Semiarid Prairie Agricultural Research Centre, Agriculture and Agri-Food Canada, Swift Current, SK. It was released in 1994 to provide a cultivar that combines high grain yield with resistance to prevalent races of common bunt [caused by Tilletia laevis Kühn in Rabenh. and T. caries (DC.) Tul. & C. Tul.] and loose smut [caused by Ustilago tritici (Pers.) Rostr.] in a semidwarf, photoperiod-insensitive background.

AC Karma was selected from the descendants of a cross ‘HY320’*5/BW553//HY358(1,4) by HY358/7910 (caused by Tilletia laevis Kühn in Rabenh. and T. caries (DC.) Tul. & C. Tul.) and loose smut [caused by Ustilago tritici (Pers.) Rostr.] in a semidwarf, photoperiod-insensitive background. AC Karma was selected from the descents of 'HY320’*5/BW553//HY358(1,4) by HY358/7910. The F1 and F2 of HY320*5/BW553//HY358 were crossed to common bunt. Five resistant F2 plants from nine F1-derived families were crossed to the F1 of HY320*5/BW553//HY358 to select the most resistant common bunt. The F1 seed of the final cross was used to establish a leaf rust resistant and smut-resistant hybrid. The F1 seed was used to establish a leaf rust resistant and smut-resistant hybrid. The F1 seed was used to establish a leaf rust resistant and smut-resistant hybrid. The F2 seed was used to establish a leaf rust resistant and smut-resistant hybrid. The F2 seed was used to establish a leaf rust resistant and smut-resistant hybrid. The F2 seed was used to establish a leaf rust resistant and smut-resistant hybrid.

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