

REQUEST FOR SUPPORT OF REGISTRATION OF **99SPELT9Z**

CROP KIND: Wheat

TYPE: Spring Spelt wheat

PROPOSER: P. Hucl;

CDC, Univ. of Saskatchewan, Saskatoon, SK, S7N 5A8

TEST NUMBERS: 99SPELT9Z; 99SPELT9

PEDIGREE: RL5407/Common winter spelt

99SPELT9Z was selected from the cross RL5407/Common winter spelt. RL5407 is an awned, grey-black hulled spring spelt accession similar to CDC Nexon in agronomic profile. Seed of the Common winter spelt wheat parent was purchased from a retail outlet. When sown in the spring of 1992 the winter spelt homogeneously failed to head during the growing season. Consequently this line was fall sown in the field (courtesy D.B. Fowler; CDC), providing pollen for the cross made with RL5407 during the summer of 1993. The F1 generation was grown in a greenhouse during the winter of 1993/1994. The F2, F3 and F4 generations were grown in bulk plots at Saskatoon during the 1994, 1995 and 1996 crop seasons. F4-derived F5 head rows were grown in a dryland nursery in 1997. 99SPELT9Z is derived from one of those bulked F₅ head rows. The F2 to F4 bulk plots were combine-harvested, dehulled and the grain sieved in order to apply selection pressure against delayed maturity. The F5 rows were selected on the basis of earlier heading relative to CDC Nexon, lack of awns, reduced height and lodging. The candidate line was evaluated in an unreplicated yield plot nursery in 1998 and selected using the same criteria as in 1997, with the addition yield, grain protein concentration and SDS sedimentation volume. 99SPELT9 was subsequently evaluated in local yield tests (1999 and 2000; SY=8) in and in the Private Spring Spelt Wheat Test from 2003 to 2005. In 2001 and 2002 99SPELT9Z was tested as a component of 99SPELT9 in the Private Spring Spelt Wheat Test. When lined out for breeder row production in 2002, 99SPELT9 consisted of two morpho-types (Y and Z) for plant height and days to head. The differences were slight (1 day difference in heading and 2 cm in height) but none-the-less distinct. In addition, the two sub-lines differed in omega gliadin profile.

AREA OF ADAPTATION: Longer crop season wheat growing areas of Saskatchewan and Alberta.

STRENGTHS: Increased yield coupled with earlier maturity, stronger straw and higher grain protein content. Lack of awns will facilitate grain handling and processing. Higher grain protein content. Intermediate reaction to FHB.

WEAKNESSES: Susceptible to stem rust, moderately susceptible to common bunt.

DESCRIPTION: 99SPELT9Z spring spelt is awnless, hollow-stemmed with earlier maturity than the spelt check cultivar CDC Nexon (Table 1). In three years of testing in the Private Spring Spelt Wheat Test, 99SPELT9Z was 21 and 10% higher yielding (hull on basis) than CDC Nexon and AC Barrie (CWRS), respectively. 99SPELT9Z was shorter-strawed and less prone to lodging than CDC Nexon. (Table1). 99SPELT9Z was earlier maturing (2 days) than CDC Nexon. 99SPELT9Z was similar to CDC Nexon for test weight, kernel weight and threshability (Table 1).

99SPELT9Z gave an intermediate reaction to prevalent races of leaf rust but was susceptible to stem rust (Table 2). 99SPELT9Z was resistant to loose smut. 99SPELT9Z was moderately susceptible to bunt, with infection levels similar to those of AC Barrie and higher than those of CDC Nexon. The average FHB index level for 99SPELT9Z was similar to that of CDC Nexon and lower than that of AC Barrie (Table 2).

Acknowledgement of Independent Test Cooperators:

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