Registration of ‘Divide’ Durum Wheat

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‘D’

Divide’ (Reg. No. CV-1009, PI 642021), spring durum wheat (Triticum turgidum L. var. durum Desf.) was developed by the North Dakota Agricultural Experiment Station in cooperation with the USDA-ARS and released on 1 June 2005. Divide was named after Divide County, a major durum production area in northwestern North Dakota. Divide was released based on its high grain yield potential and excellent quality.

Divide was tested as the experimental line D971511 and was selected from the cross ‘Ben’ (PI 596557)/D901282//’Belzer’ (PI 603286) made in 1993 (Elias and Miller, 1998) and (Elias et al., 1999). The parent D901282 was derived from the cross D84102//’Regold’. The pedigree of D84102 is D7984/D7926. The parents of D7984 are ‘Ward’ (CI 15892) and ‘Vic’ (CI 17789), (Quick et al., 1974, 1980). D7926 was derived from the cross D7456/Vic. D7456 was derived from the cross D6771//’Rugby’ (CI 17284) (Quick et al., 1975). The pedigree of D6771 is ‘Stewart 63’ (CI 12066)/YT54/N10B (Knott, 1964).

Divide was developed using the pedigree breeding method and was bulked in the F5 generation as an F4-derived line in 1997. Six thousand F4,12 heads were selected from quality drill strips at Langdon, ND, for seed purification. Heads were threshed individually and seeded as headrows at Yuma, AZ, in 2004. Nonuniform rows were discarded, and the remaining rows were bulk harvested as Breeder seed. Divide is a daylength-sensitive durum wheat that is similar in heading date (65 d from seeding to when approximately 50% of the plants had heads completely emerged from the boot) to ‘Mountrail’ (Elias and Miller, 2000b) and 1 d later than ‘Ben’. Divide has an average plant height of 89 cm, which is similar to Ben and 16 cm taller than the semidwarf cultivar Plaza (Elias et al., 2001b). The culm of Divide is white, and the peduncle is erect. Divide has midlong spikes that are awned, oblong, middense, and erect. The awns are 6 to 16 cm long. The glumes are oblique, white. The kernels are amber, hard, long, and elliptical; the crease is midwide and shallow; and the germ is large; the crease is midwide and shallow; and the brush is long.

Based on 38 location years of testing in the Durum Nursery (URDN) from 2001 to 2004, yield of Divide (3971 kg ha−1) was higher than ‘Maier’ (3722 kg ha−1) (Elias and Miller, 2000a), and Pierce (3554 kg ha−1) (Elias et al., 2004). In those same years, Divide had a 767.7 kg m−3 grain volume weight, which was higher than Maier (761.2 kg m−3) and 12.8 kg m−3 lower than ‘Tonder’ (778.0 kg m−3) (Elias et al., 2001a). Divide had a 38.7 mg kernel weight, which was lower than Maier (35.9 mg) and lower than Ben (39.7 mg). Divide had a 778.0 kg m−3 grain volume weight, similar to Maier and 12.8 kg m−3 lower than Lebsock.

Grain samples from quality drill strips grown years (2001–2003) were tested for durum wheat at Dakota State University (NDSU). The semolina protein of Divide (64.8%) on the Buhler-Miag laboratory mill at the Department of Cereal and Food Sciences, NDSU, was similar to Maier (65.1%) and Mountrail (64.2%) but lower than Ben (65.1%). Divide has strong gluten mixing characteristics as estimated by mixograph, similar to Pierce (82) than Mountrail (5.2). Semolina protein of Divide was similar to Ben but higher than Mountrail (5.2). Pasta produced from Divide has a color score similar to Maier and Lebsock but higher than Mountrail (64.8%).

Divide was evaluated at the USDA-ARS, Mennonite Laboratory, Fargo, ND, for wheat stem rust (caused by Puccinia graminis Pers.:Pers. f. sp. tritici Eriks. & E. Henn) similar to Maier and Lebsock when evaluated in the Uniform Regional Nursery (URDN) at Langdon, ND, from 2001 to 2004. On a scale of 0 to 9, where 0 is resistant and 9 is susceptible, Divide had an average score of 3.2 in field reaction to tan spot (caused by Pyrenophora tritici-repentis (Died.) Drechs.]).

SEMOLINA PROTEIN

P. triticina Eriks.) similar to Maier and Lebsock when evalu-