Registration of 'Plaza' Durum Wheat

'Plaza' (Reg. no.CV-910, PI 613619), spring durum wheat (Triticum turgidum L. var. durum Desf.) was developed by the North Dakota Agricultural Experiment Station in cooperation with USDA-ARS and officially released on 1 July 1999. Plaza was named after a community in Mountrail County, ND. Plaza was released because it is a semidwarf high yielding cultivar with good quality.

Plaza was tested as D91080 and was selected from the cross 'Plenty'/D8291 made in 1987 by R.G. Cantrell. The parent D8291 was derived from the cross ‘Cando’/'Edmore’/'Coulter’. Plaza was developed using the pedigree method and was bulked in the F5 generation as an F4-derived line in 1991. Plaza was tested for agronomic and quality traits at 40 location-years from 1995 to 1998.

Plaza is a daylength-sensitive durum wheat (59 d) that is 0.5 and 0.9 d later in heading date than ‘Lloyd’ (2) and ‘Ben’ (4), respectively. Plaza's plant height averages 74 cm and is 3 cm taller than Lloyd and 15 cm shorter than the medium height cultivar Ben. The culms are white and the peduncle is slightly recurved. Plaza’s spikes are midlong, awned, oblong, middense, and erect. The awns are white and 10 to 11 cm in length. The glumes are glabrous, white, long, and wide. The kernels are amber, hard, long, and elliptical; the germ is midsized; the crease is midwide and shallow; and the brush is absent.

Grain yield of Plaza (3790 kg ha⁻¹) was 4.6 and 5.8% higher than Ben and ‘Renville’ (1), respectively, based on 40 location-years of testing in the Uniform Regional Durum Nursery from 1995 to 1998. Plaza (3333 kg ha⁻¹) had a 8.8 and 6.4% higher mean yield than Ben and Renville, respectively based on 17 location-years in the North Dakota Research Extension Centers’ varietal trials from 1996 to 1998. Plaza had 750.1 kg m⁻³ grain volume weight and 34.8 mg kernel weight when tested at 40 location-years in the Uniform Regional Durum Nursery. Plaza has 32.2 kg m⁻³ higher grain volume weight and 0.6 mg lower kernel weight than Lloyd.

Based on 23 location-years in North Dakota field plots (1995 to 1998), the semolina extraction rate of Plaza (60.7%) on the Buhler-Miag laboratory mill at the Department of Cereal Science, North Dakota State University, is higher than Lloyd (59.8%) and similar to Ben. Other milling characteristics and spaghetti color were favorable. Plaza has strong gluten mixing characteristics (classification: 5.0) as estimated by mixograph, weaker than Lloyd and ‘Maier’ (3) (classification: 6.0 and 7.0, respectively). Semolina protein of Plaza was 131 g kg⁻¹, which is similar to Lloyd but lower than Maier (145 g kg⁻¹) and Ben (139 g kg⁻¹).

Plaza was evaluated at the USDA-ARS, Northern Crop Science Laboratory, Fargo, ND for wheat stem rust (caused by Puccinia graminis Per.;Pers. f. sp. tritici Eriks. & E. Henn) and was found to be highly resistant to pathotypes Pgt-QCCJ, -QTHJ, -RTQQ, -TMLK, -TPMK, and -HPHJ. Plaza’s adult plant resistance in the field to leaf rust (caused by P. triticina Eriks.) is high (10R) and is similar to Ben and Renville. Plaza has a moderate level of resistance to tan spot [caused by Pyrenophora tritici-repentis (Died.) Drechs]. Plaza is moderately susceptible to Fusarium head blight [caused by Fusarium graminearum Schwabe; teleomorph Gibberella zeae (Schweinitz) Petch].

Breeder seed will be maintained by the Seedstocks Project, Agricultural Experiment Station, North Dakota State Univ., Fargo, ND 58105-5051. Protection for Plaza will be applied for under the U.S. Plant Variety Protection Act for foundation, registered, and certified seed.

E.M. ELIAS*, J.D. MILLER, and F.A. MANTHEY (5)
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References and Notes

5. E.M. Elias, Dep. of Plant Sciences, North Dakota State Univ., Fargo, ND, 58105; J.D. Miller, USDA-ARS, Northern Crop Science Lab., Fargo, ND 58105; F.A. Manthey, Dep. of Cereal Science, North Dakota State Univ., Fargo, ND, 58105. * Corresponding Author (Elias.Elias@ndsu.edu).