Registration of ‘AGS 2000’ Wheat

‘AGS 2000’ soft red winter wheat (Triticum aestivum L.) (Reg. no. CV-913, PI 612956) was cooperatively developed and released by the Georgia and Florida Agricultural Experiment Stations in September 1999. AGS 2000 has a combination of high yield, high test weight, above average milling quality, good disease resistance, and medium maturity.

AGS 2000 was derived from a three way cross, Pioneer Brand ‘5255’/PF 84301//Florida 302’ in 1989. PF 84301 (PF 7576/PF 78901/CNT10/BR5) is an experimental line with aluminum tolerance from the National Wheat Improvement Center (EMBRAPA), Passo Fundo, Rio Grande do Sul, Brazil. It has the 1BL.1RS translocation. The F1 was grown in the field as a single row during the 1990 season. The population was advanced thorough the F5 generation by means of the pedigree method of breeding with individual spikes selected for traits such as kernel shape and size, lodging resistance, maturity, and grain appearance, seed from 30 fly [Mayetiola destructor (Say)], high grain yield and powdery mildew [(caused by Blumeria graminis DC. f. sp. tritici Em. Marchal), and glume blotch [(caused by Stagonospora nodorum (Berk) Castellani & E.G. Germano]. Selected spikes were harvested, threshed individually, and planted in single 1-m headrows and were advanced to the next generation as F2:3-, F3:4-, and F4:5-derived lines, respectively, at Griffin, GA. AGS 2000 is the F4-derived bulk of four head rows selected from 55 headrows. It was tested with the experimental designation 89482E7.

AGS 2000 was evaluated in Georgia and Florida for agronomic performance in nursery plots in 1995, in Georgia-Florida state trials at five locations from 1996 to 1999, and in the USDA-ARS Uniform Southern Soft Red Winter Wheat Nursery (USSRWNN) at 25 locations in 1999. In the 3-yr state trials, grain yield of AGS 2000 was 4488 kg ha⁻¹ as compared with 4224 and 3993 kg ha⁻¹ for Pioneer Brand ‘2684’ and ‘Coker 9835’, respectively. Grain yield was equal to Pioneer Brand ‘2684’ and 51 kg m⁻³ higher than Coker 9835. In comparison with Florida 302, AGS 2000 averaged 4 d earlier in maturity and 1 cm shorter in height. In the USSRWNN, AGS 2000 ranked first in 1999 and 2000 for grain yield across all locations. Milling and baking characteristics of AGS 2000 were rated by the USDA-ARS Soft Wheat Quality Lab., Wooster, OH, as part of evaluations of the USSRWNN. AGS 2000’s milling score was 101.5 (vs. 96.1 for Coker 9835) and its baking score was 98.8 (vs. 94.4 for Coker 9835). Data from the USDA-ARS Soft Wheat Quality Laboratory indicate that AGS 2000 has excellent milling and baking quality with above average micro test weight, average softness equivalent, above average flour yield, low flour protein, and average cookie diameter.

In Georgia, AGS 2000 is medium maturing (114 d to heading), awned, white chaffed, blue-greenish plant color, and medium stature (87 cm) at maturity with good straw strength. The spikes of AGS 2000 are erect at maturity, medium size, and awned. The glumes are wide and long with oblique F1 plants was used to establish an F2 field plot. Approximately 100 heads were selected at random from individual F2 plants, and a 40-g subsample of the bulked seed was used to establish a single F1 plot. Seed from the F1 plot was bulk harvested, then a 60-g subsample was used to establish an F2 field plot. Single heads from 150 F2 plants were threshed individually to establish F3 head row families. Following selection for general adaptation, plant height, and grain appearance, seed from 30...