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 ‘2555’ (Reg. no. CV-4301) / ‘Florida 302’ in 1989, PI 84301 (PF 7576/PF 78901/CNT10/BRS5) 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 (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:F3, F3:F4, and F4:F5-derived lines, respectively, at Griffin, GA. AGS 2000 is the F5 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 (USSRWWN) 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 volume weight of AGS 2000 (799 kg m⁻³) is equal to Pioneer 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 USSRWWN, 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 USSRWWN. 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 dense, strap, and awned. The glumes are wide and long with oblique shoulders and acuminate beaks. Kernels are red and ovate; the kernel brush is short; the kernel cheek is rounded. and the kernel crease is shallow in width and medium in depth. The stems and leaf sheaths are blue-greenish color with a waxy bloom. Kernel weight is about 38 mg.

AGS 2000 is resistant to the biotypes E, G, and O of Hessian fly [Mayetiola destructor (Say)], USDA-ARS Crop Production and Pest Control Research Unit, West Lafayette, IN, and to prevalent biotypes in the field present in Georgia and Florida. AGS 2000 is moderately resistant to leaf rust, powdery mildew, and glume blotch. It is moderately susceptible to the soilborne mosaic virus (WSBMV).

Classes of seed production are limited to Breeder, Foundation, and Certified. Breeder seed of AGS 2000 will be maintained by the Georgia Agricultural Experiment Station, University of Georgia, Georgia Station, Griffin, GA 30223-1797. A small sample of seed for research purposes can be obtained from the corresponding author for at least 5 y. U.S. Plant Variety Protection for AGS 2000 (89482E7) is pending (PVP Certificate no. 200000141).


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Registration of ‘Zak’ Wheat

‘Zak’ soft white spring wheat (Triticum aestivum L.) (Reg. no. CV-914, PI 607839) was developed by the Agricultural Research Center of Washington State University in cooperation with the Agricultural Experiment Stations (AESs) of the University of Idaho and Oregon State University and the USDA-ARS. This variety was named in honor of emeritus professor Dr. C.F. Konzak, who was the spring wheat breeder at Washington State University from 1957 to 1993. Zak was jointly released by the AESs of Washington, Idaho, and Oregon and the USDA-ARS. Zak was released as a replacement for ‘Wawawai’ in the intermediate to high rainfall (>457 mm of average annual precipitation), nonirrigated wheat production regions of Washington State based on its tolerance to the Hessian fly [Mayetiola destructor (Say)], high grain yield and superior end-use quality.

Zak, tested under the experimental designations WA00-7850, W9400154, and K89792, were assigned through progressive generations of advancement, is a F₅ head row selection derived from the cross ‘Pavon S’/S/Pi 167822/Ci 13438 113-6/‘Idaed’/‘Marfed’ 68-5/4/’Lemhi 66/3/’Yaktana 54A’*4//’Norin 10’/‘Brevor’/6/’Walladay’/7/Pi 506355/8/’Treas- sure’. CI 13438 113-6 and Marfed 68-5 were single plant selections, based on plant type, from the original cultivars. The following modified pedigree-bulk breeding method was used to advance early generation progeny. Bulked seed (30 g) from F₁ plants was used to establish an F₁ field plot. Approximately 100 heads were selected at random from individual F₁ 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