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Registration of 'Elissavet' Wheat

'Elissavet' spring wheat (*Triticum aestivum* L. em Thell) (Reg. no. CV-1003, PI 641961) (C.I. 01946 of the Variety Research Institute of Cultivated Plants, Greece) was developed by the National Agricultural Research Foundation—Cereal Institute, Greece, and released in fall of 2000. Elissavet was released because of its broad adaptation, high yielding ability, high protein concentration, and good-end use quality in central and northern Greece.

Elissavet was derived as a single plant selection, from an F_7 bulk population of the cross 'Joss Cambier'/'Emu'/'Chiroca'/'4/Ias 20'/'Willet Enano'*3/'Narino 59'/'3/'Kavko', of the 17th International Bread Wheat Screening Nursery of CIMMYT. CIMMYT recorded the cross number as CM66246-C-1M-1Y-1M-2Y-OM. The nursery was established the fall of 1983 in experimental fields at the Cereal Institute, located at Thermi-Thessaloniki.

Single plant selections were made on the basis of short stem, lodging and disease resistance, early maturity, and fertile heads in the summer of 1984. Single heads from each selected plant were used to establish $F_{7,8}$ head rows of low density during the fall of the same year. On the basis of the same selection criteria, F_8 plants were selected from the visually best $F_{7,8}$ head rows the summer of 1985, and $F_{7,9}$ head rows of low density were sown during the fall of the same year.

At harvest, seeds of nonselected plants were bulked from each group of selected $F_{7,8}$ head rows and were used to establish microtrials the autumn of 1985. Microtrials were composed of two row plots, 1.5 m long, and were established at two locations. The three national checks ('Vergina', 'Dio', and 'Yecora-S') were included in these trials as randomly repeated checks. On the basis of uniformity and the selection criteria described and supported by the microtrials, the best $F_{7,9}$ head rows were selected the summer of 1986. Single plant selections were repeated in $F_{7,9}$ selected head rows, and $F_{7,10}$ head rows of low density and microtrials were established the fall of 1986.

Elissavet was derived from a F_{10} head row, selected the summer of 1987, that was multiplied in F_{11} and F_{12} head rows to give the first breeder seeds the summer of 1989. Elissavet was evaluated for yielding ability, quality, and stability at numerous locations in Greece during 1990 to 1996. Elissavet has been cultivated successfully in Greece since 2001.

Elissavet is an awned, white-chaffed, short spring bread wheat with red kernels and parallel, symmetric, compact heads. Seeds of Elissavet are ovate, red, and medium hard. The 1000-kernel weight of Elissavet is 33 g compared with 32, 33, and 35 g for Vergina, Dio, and Yecora-S, respectively. Elissavet has a height of nearly 100 cm compared with 110, 100, and 80 cm for Vergina, Dio, and Yecora-S, respectively. Elissavet is resistant to lodging (1 on the scale of 0–9, where 0 is no lodging and 9 is complete lodging compared with 4, 1, and 1 for Vergina, Dio, and Yecora-S, respectively). Elissavet needs 176 d to reach maturity, compared with 180, 190, and 162 d for Vergina, Dio, and Yecora-S, respectively.

On the basis of field evaluations conducted by the Cereal Institute at 32 site-years (1990–1996), Elissavet performs better in yielding ability and stability than the three national checks and most Greek bread wheats, especially under drought conditions. When yield data are averaged over those 32 site years (1990–1996), Elissavet has a mean grain yield of 4680 kg ha⁻¹ compared with 4400 and 4580 kg ha⁻¹ for Vergina and Yecora-S, respectively. Comparable laboratory estimations for grain volume weight made by the Cereal Institute showed that Elissavet has a mean grain volume weight of 783 kg m⁻³ compared with 705, 769, and 754 kg m⁻³ for Vergina, Yecora-S, and Dio, respectively.

Rust resistance estimations performed by the Cereal Institute in 32 site-locations (1990–1996) under physical conditions showed that Elissavet is resistant to the races of three rusts currently occurring in Greece (0 in the scale 0–9, where 0 is no infection and 9 susceptibility). According to these estimations, Elissavet is resistant to stem rust (caused by *Puccinia graminis* Pers.:Pers.), leaf rust (caused by *Puccinia triticina* Eriks), and stripe rust (caused by *Puccinia striiformis* Westend.). The main races of stem rust currently occurring in Greece are not known, but according to earlier references (Skorda, 1964, 1966, 1968, 1974), the main races of stem rust during 1956 to 1969 were 21, 17, 34, and 14.

The milling and baking characteristics of Elissavet were evaluated from 1990 to 1996. Elissavet has a sedimentation value (Zeleny) equal to 37.1 compared with 35.3 for Vergina and Yecora-S. Elissavet has a mean dry flour protein concentration of 149 g kg⁻¹ compared with 148 g kg⁻¹ for the mean of the same two checks.

Estimation for gluten index made by the Perten Glutomatic Instrument (Perten Instruments, Inc., Springfield, IL) showed that Elissavet had a mean Gluten index equal to 99 compared with 53, 88, and 96.4 for Vergina, Dio, and Yecora-S, respectively. Elissavet has a mean flour extraction rate equal to 69.7% compared with 57.8, 65.5 and 68.3% for Vergina, Dio, and Yecora-S, respectively, and a loaf volume equal to 602 cm³ per 100 g of dry flour compared with 567, 582, and 630 cm³ per 100 g of dry flour for Vergina, Dio, and Yecora-S, respectively.

Published data from preliminary field trials established during 1986 to 1994, in eight locations, are in good agreement with the above estimations (Gogas et al., 2000). Results from 11 trials, performed by the Variety Research Institute of Cultivated Plants during 1997 to 1999, show that Elissavet has a mean grain yield of 4510 kg ha⁻¹ compared with 4360 kg ha⁻¹ for the mean of Vergina and Yecora-S.

Breeder seed and basic seed of Elissavet is maintained by the National Agricultural Research Foundation, Cereal Institute, Greece. Large quantities of seed are available for commercial, cultural, and industrial purposes by contacting the Bios Agrosystems at the following electronic address: info@bios-agrosystems.gr. Seed of Elissavet is maintained by the National Agricultural Research Foundation (N.A.G.R.E.F.), Cereal Institute, Greece. Small quantities for research purposes may be obtained by contacting the corresponding

author. In the USA, small quantities of seed may be obtained from the National Plant Germplasm System (NPGS).

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