Registration of ‘Giza 126’ Barley

‘Giza 126’ (Reg. no. CV-248, PI 583828) is a six-rowed spring barley (Hordeum vulgare L.) cultivar developed by the Barley Research Department of the Agricultural Experiment Station at Giza, Egypt, and released in December 1993. It was selected for drought stress, from an F3 population received from the International Center for Agricultural Research in Dry Areas (ICARDA) using the pedigree method. It originated from the single cross ‘Baladi Bahteem’/SD 729-Por 12762-BC’. Single-plant selections were made in the F4 generation and grown as head rows in the F5 generation in the rainfed area of the northwest coast of Egypt under natural drought stress. The first yield trials of Giza 126 (with the line designation of AYT-4-90) were conducted under natural drought stress in 1989–1990 in the Barley Screening Nursery (BSN) in six locations along the northwest coast and the northern Sinai peninsula. In replicated preliminary multilocation yield trials (Local Barley Yield Trial), Giza 126 had superior yield performance and exhibited a high level of stability over all environments. It had good agronomic characteristics and was entered into Advanced Barley Yield Trials (ABYT). Giza 126 was included in large-scale experiments in farmers’ fields, along with a check cultivar ‘Giza 123’ and the farmer’s cultivar. It was evaluated for grain yield and other yield characteristics in 20 different environments representing 3 yr of data (1990–1991 to 1992–1993) along the north coast of Egypt. The Egyptian commercial cultivar Giza 123 was used as check. Giza 126 was tested for the major barley diseases occurring in each environment: net blotch (caused by Pyrenophora teres Drechs.), powdery mildew (caused by Erysiphe graminis f. sp. hordei Em. Marchal), and barley stripe (caused by Pyrenophora graminea Ito & Kuribayashi). Disease assessment for powdery mildew and net blotch was based on the intensity (0–9 scale) of disease on foliar parts (2,4). Percentage infection for barley stripe disease was based on the proportion of striped vs. healthy plants (1).

Giza 126 is a tall six-rowed spring feed barley with rough awns and semilax spikes. Juvenile plants have intermediate growth habit. Leaves are medium green in color and wider than ‘Giza 125’, averaging 24 mm in width. Basal leaf sheaths are glabrous and auricles are white. Spikes are tapered, medium long, and erect. Awn length exceeds that of the spike. The rachilla is medium long, with medium-length rachilla hairs. Length of glumes is equal to that of the grain. Stems are dark green in color, and Giza 126 has wider adaptability than Giza 125 under different levels of drought stress in rainfed areas of <200 mm. It is more stable in performance and has greater tolerance to high-stress environments such as drought stress compared with Giza 123 and Giza 125 (3). It is moderately resistant to powdery mildew and tolerant to other major barley diseases under rainfed conditions. It is a spring-type barley, with about 90 to 95 d to heading and about 130 to 135 d from seedling (first shower) to maturity, depending on the environment and amount of precipitation and temperature. It has relatively high 1000-kernel weight, ranging from 43 to 45 g. Breeder seed is being maintained at the Agricultural Research Station at Giza and foundation seed is available from the Barley Research Department of the Agricultural Experiment Station at Giza, Egypt, and released in December 1993. It was selected for drought stress, from an F3 population received from the International Center for Agricultural Research in Dry Areas (ICARDA) using the pedigree method. It originated from the single cross ‘Baladi Bahteem’/SD 729-Por 12762-BC’. Single-plant selections were made in the F4 generation and grown as head rows in the F5 generation in the rainfed area of the northwest coast of Egypt under natural drought stress. The first yield trials of Giza 126 (with the line designation of AYT-4-90) were conducted under natural drought stress in 1989–1990 in the Barley Screening Nursery (BSN) in six locations along the northwest coast and the northern Sinai peninsula. In replicated preliminary multilocation yield trials (Local Barley Yield Trial), Giza 126 had superior yield performance and exhibited a high level of stability over all environments. It had good agronomic characteristics and was entered into Advanced Barley Yield Trials (ABYT). Giza 126 was included in large-scale experiments in farmers’ fields, along with a check cultivar ‘Giza 123’ and the farmer’s cultivar. It was evaluated for grain yield and other yield characteristics in 20 different environments representing 3 yr of data (1990–1991 to 1992–1993) along the north coast of Egypt. The Egyptian commercial cultivar Giza 123 was used as check. Giza 126 was tested for the major barley diseases occurring in each environment: net blotch (caused by Pyrenophora teres Drechs.), powdery mildew (caused by Erysiphe graminis f. sp. hordei Em. Marchal), and barley stripe (caused by Pyrenophora graminea Ito & Kuribayashi). Disease assessment for powdery mildew and net blotch was based on the intensity (0–9 scale) of disease on foliar parts (2,4). Percentage infection for barley stripe disease was based on the proportion of striped vs. healthy plants (1).

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Registration of ‘Newport’ Navy Bean

‘Newport’ navy bean (Phaseolus vulgaris L.) (Reg. no. CV-128, PI 586656) was developed and released cooperatively by the Michigan Agricultural Experiment Station and the USDA-ARS in 1995 as an upright, mid-season, disease-resistant cultivar.

‘Newport’ was derived from the single cross ‘Baladi Bahteem’/SD 729-Por 12762-BC. Single-plant selections were advanced in the greenhouse and space-planted in an F2 nursery at Saginaw, MI. F1 plants were advanced in the greenhouse and then F2 progeny were advanced as a plant row in P3. F1 plants were advanced in the greenhouse and then F2 progeny were advanced as a plant row in P3. Disease resistance to anthracnose [caused by Colletotrichum lindemuthianum (Sacc. & Magnus) Lams.-Scrib.] and other characteristics of determinate Type I and II breeding lines. F1 plants were advanced in the greenhouse and then F2 progeny were advanced as a plant row in P3. Disease resistance to anthracnose [caused by Colletotrichum lindemuthianum (Sacc. & Magnus) Lams.-Scrib.] and other characteristics of determinate Type I and II breeding lines.

‘Newport’ was extensively tested for yield and other traits at 33 locations in Michigan over five seasons. Newport averaged 2450 kg ha−1 and outyielded the mid-season bean ‘Seafarer’ by 8%; it was equivalent in yield to the mid-season, disease-resistant cultivar ‘Avanti’ and ‘Mayflower’. Newport has demonstrated uniform maturity and excellent seed and canning quality. The cross was designed to combine the resistance to anthracnose [caused by Colletotrichum lindemuthianum (Sacc. & Magnus) Lams.-Scrib.] and other characteristics of determinate Type I and II breeding lines.

References and Notes


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