Registration of ‘Hashem’ Kabuli Chickpea

‘Hashem’ is a Kabuli chickpea (Cicer arietinum L.) cultivar (Reg. no. CV-244, PI 638618) developed by the International Centre for Agricultural Research in the Dry Areas (ICARDA), Aleppo, Syria, and released by the Seed and Plant Improvement Institute (SPII), Karaj, Iran, for commercial cultivation in the Mediterranean area of Iran in 1997. Hashem, ICARDA accession number FLIP 84–48C, is an Ascochyta blight [caused by Ascochyta rabiei (Pass.) Labr.] resistant cultivar with erect growth habit, medium seed size and is recommended for winter planting (Sabaghpour and Zadeh, 2002).

ICARDA supplied Hashem to SPII, Iran, in 1985 as part of the Winter Chickpea International Screening Nursery (CISN-W-86). Hashem was developed from a cross between ILC 1920 and ILC 2956 made in 1981 at Tel Hadya, the main research station of ICARDA, in Aleppo in northern Syria (36°01′ N, 36°56′ E, 284 m asl). The parental lines, ILC 1920 and ILC 2956, originated from India, and the former Soviet Union, respectively. The F1 was advanced to F2 in the off-season nursery at Terbol in the Beqa’a valley in Lebanon (33°49′ N, 35°59′ E, 890 m asl) and selected individual plants were harvested. The individual plant progenies were grown as F2 in an Ascochyta blight nursery at Tel Hadya, Syria. The individual plants resistant to Ascochyta blight were selected from different F2 lines and were advanced to F3 during the off-season at Terbol, Lebanon. The F3 progenies were evaluated again in the Ascochyta blight nursery for resistance at Tel Hadya, and the resistant and agronomically uniform progenies were selected and bulked for seed increase. The bulked F3 progenies from this cross (ILC 1920/ILC 2956) were accessed in 1984 at ICARDA and given FLIP numbers. Seed of these FLIP lines was increased along with other resistant materials shared with National Agr. Res. Systems (NARS) for evaluation in CISN-W-86 during the 1985–1986 season. CISN-W-86 was also shared with legume scientists at Golestan province in Iran. A few lines which were found promising for autumn planting in the Golestan province in 1988 were subsequently evaluated in replicated preliminary yield trials during 1989 to 1990, and later in different advanced yield trials (A, B, C) during 1990 to 1996 (Sabaghpour, 2001).

Ascochyta blight is a major yield reducing disease in chickpea in Golestan, Kermanshah, Ilam, Lorestan, and Fars provinces of Iran (Sabaghpour, 2001). Occurrence and severity of this disease depends largely on the cultivar and weather conditions in a given year. The damage due to Ascochyta blight in the epidemic years can reach 100% in farmers’ fields (Sadri and Banai, 1996). Most of the chickpea cultivars planted by farmers, such as ‘Bivanij’, ‘Korosh’, and ‘Jam’, are susceptible to Ascochyta blight (Sabaghpour et al., 2003). However, the new line, Hashem, has shown resistance to Ascochyta blight during evaluation for about 10 yr under field conditions in the epidemic years and under artificial inoculation in the disease nursery in the greenhouse. Hashem is the first Ascochyta blight resistant variety with erect growth habit released in Iran and is suitable for combine harvesting. Productivity of this line was significantly higher than the local variety, Korosh, when Ascochyta blight was widespread in 1996. Hashem produced 2021 kg ha−1 in joint extension–research trials in 1992 and exhibited Ascochyta blight resistance in 1992 while local variety, Korosh, produced 991 kg ha−1 (Sabaghpour, 2001). Hashem also out-yielded the local variety, Bivanij, by a significant margin in farmers’ fields in two regions in Kermanshah province in 1998.

Hashem has an erect plant type with a mean plant height of 80 cm. The first pod-bearing node is about 20 cm above ground level and the combine harvester can easily harvest the variety. The plant possesses green stems, white flowers, and green pods. On average it bears 20 pods per plant, and 1.3 seeds per pod. Seeds of Hashem are beige in color, oval’s head shaped, 35 g 100 seed−1 in weight, and contain 27.1% protein. Hashem takes 158 d to flower and 185 d to mature when planted in winter.

Seed of Hashem is maintained at ICARDA (Aleppo, Syria) and at the Dryland Agricultural Research Institute (DARI), Maragheh, Iran, and is available in small quantities on written request. Recipients are asked to recognize the source if it contributes to the development of a cultivar or germplasm or is used for other research purposes.

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References


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