REGISTRATIONS OF CULTIVARS

Registration of ‘Ali Dayi’ Lentil

‘Ali Dayi’ lentil (Lens culinaris Medik.) (Reg. no. CV-13, PI 631395) was developed at the International Center for Agricultural Research in the Dry Areas (ICARDA), Aleppo, Syria, and released by the Central Research Institute for Field Crops (CRIFC), Ankara, Turkey, in 2001. Ali Dayi, a high-yielding red cotyledon lentil cultivar with lodging resistance, is recommended for spring cultivation in central Anatolia in Turkey.

Ali Dayi, ICARDA accession number ILL 5722, was developed from a cross of ILL 883 by ILL 470. The female parent, ILL 883, is a landrace from Iran, and ILL 470 is a landrace of Syria. The segregating populations were advanced through the bulk method, and single-plant selection was practiced in the F₁. The F₂:F₃ and F₄:F₅ progenies were evaluated at ICARDA in nonreplicated nurseries. The line was evaluated in replicated preliminary and advanced yield trials in the F₄:F₅ and F₆:F₇, respectively. Because of its excellent yield performance and other agronomic attributes, it was entered into the international testing program with the pedigree number FLIP 85-51 L, and accessed by Genetic Resources Unit of ICARDA as ILL 5722.

The Food Legume Improvement Program of CRIFC, Ankara, Turkey, received ILL 5722 through the Legume International Nursery Network in 1993 in the small-seeded lentil nursery category. It was identified as one of the promising lines for spring planting at Haymana, the main CRIFC research center. Subsequently, the line was evaluated in preliminary and large-plot yield trials at the same location. Because of its higher yield performance, lodging resistance, and desirable seed characteristics, it was selected for multilocation yield evaluations.

From 1997–1998 to 1999–2000, ILL 5722 was evaluated at Haymana, Konya, Yozgat, and Karaman research sites in central Anatolia. On average, seed yield of ILL 5722 was 1490 kg ha⁻¹ compared to 1277 kg ha⁻¹ for the best check, Emre 20, an increase of 17%. Low yields occurred in 1998–1999 because of severe drought. Significantly higher yields were recorded in all the trials, except 1997–1998 at Haymana and in 1998–1999 at Konya and Yozgat.

ILL 5722 attains a height of 30 cm, with first pod height at about 12 cm from the ground level, and exhibits an erect growth habit with at least three upright primary branches. The compound leaves have light pubescence, medium sized leaflets, and a well-developed tendril. Tendrils intermingle with each other and keep the canopy in an upright position and suitable for mechanical harvest. It flowers after 59 d; its flowers are white. ILL 5722 reaches physiological maturity after 89 d with no pod shedding even at complete maturity. Seeds have a brown testa without any pattern and weigh 4.7 g/100 seeds. Cotyledons are red-green. Protein concentration in ILL 5722 is 252 mg g⁻¹/100 seed. Cotyledons are bright red. Protein concentration in ILL 5883. The line was entered into the Lentil Germplasm Catalog as accession ILL 5883.

The Syrian national program identified ILL 5883 as a Jordanian landrace, 74TA14. It was introduced in 1971, and is designated as ILL 16. Considerable heterogeneity was observed among plants, and a single-plant selection (81S 15) was made at ICARDA in 1981. After nonreplicated preliminary screening nursery and preliminary and advanced yield trials between 1983 and 1985, it was entered into the international testing program as one of the promising lines in the small-seeded lentil nursery category. The line was entered into the Lentil Germplasm Catalog as accession ILL 5883.

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The line was evaluated under on-farm trials from 1996–1997 at 14 sites across the lentil-growing areas in Syria. Averaged over 154 on-farm trials, ILL 5883 provided seed yield of 1365 kg ha⁻¹, compared to 1232 kg ha⁻¹ for the local check, Hurani. Lentil straw is an important animal feed in Syria. The cultivar produced an average straw yield of 913 kg ha⁻¹.

Vascular wilt is a devastating disease of lentil in many countries. Yield losses up to 72% have been reported (Bayaa et al., 1986). ILL 5883 is resistant to vascular wilt evidenced from plastic house screening in trays (Vasudeva & Srinavasan, 1988) and in wilt-sick plot at Tel Hadya, ICARDA. In screening trials in wilt-sick fields from 1993–1994 ILL 5883 had <5% wilted plants compared to 75% wilted plants in the local check, Hurani. In open field trials in the years across Syria, 2.7% wilted plants have been recorded in ILL 5883.