REGISTRATIONS OF CULTIVARS

Registration of ‘Idlib-3’ Lentil

‘Idlib-3’ lentil (Lens culinaris Medik.) (Reg. no. CV-20, PI 634542) was developed at the International Center for Agricultural Research in the Dry Areas (ICARDA), Aleppo, Syria, and released in 2002 by the General Commission for Scientific Agricultural Research (GCSAR), Ministry of Agriculture and Agrarian Reform, Syria. It is a high-yielding, red-cotyledon lentil cultivar with lodging resistance and resistance to lentil vascular wilt disease [caused by Fusarium oxysporum f. sp. lentis (Vasudeva & Srinavanasa) Gordon]. The cultivar is tolerant to drought, which is mainly achieved through its rapid grain filling capacity and early maturity and has been recommended for cultivation in low rainfall (<350 mm) areas in Syria.

The Food Legume Improvement Program of GCSAR, Syria, received the line ILL 6994 from ICARDA in 1990. It is a breeding line developed at ICARDA from a cross between ILL 99 and ILL 5588 commissioned in 1983. The female parent, ILL 99, is a Moroccan landrace, and the male parent, ILL 5588, is an elite line developed through pure line selection from a Jordanian landrace population. The line was developed following a bulk-pedigree method and included in the international testing program as FLIP 90-25L. The line was later designated as ILL 6994 in the ICARDA’s Lentil Germplasm Catalog and released for commercial production with its popular name Idlib-3.

Idlib-3 was identified as a promising line from Lentil International Yield Trial (small seed) in the 1990–1991 cropping season. After seed increase in the 1991–1992 season, it was evaluated over the 3-yr period at six research stations of GCSAR (representing lentil-growing environments in Syria) under the national yield testing program from 1992-1993 to 1994–1995. It produced an average yield of 1010 kg ha⁻¹ compared with 893 kg ha⁻¹ for check, ‘Hurani’ (ILL 2130), an increase of 13.1%. Results of on-farm trials from 1995–1996 to 1997–1998 across 14 locations (six research stations and eight farmers’ fields) revealed that Idlib-3 gave a mean yield of 1296 kg ha⁻¹ compared with 1123 kg ha⁻¹ for Hurani, an increase of 15.4%. Under large-scale production in farmers’ fields, Idlib-3 out-yielded the check by 47.1%. Comparing zone-wise yielding ability, Idlib-3 gave an average yield increase of 29.9% in zone B (rainfall, 250-350 mm) and 8.2% in zone A (rainfall, >350 mm) over the local check, Hurani. Lentil straw is a valuable animal feed in Syria, and the variety produced an average straw yield of 3716 kg ha⁻¹.

Lentil Fusarium wilt disease is the major impediment of lentil production in the region. Yield losses up to 72% have been reported in Syria (Bayaa et al., 1986). Idlib-3 is a wilt resistant cultivar as evidenced from its performance in plastic house evaluations and under field-testing. In a wilt-sick plot at Tel Hadya, Idlib-3 showed a high level resistant reaction with only up to 5% wilted or dead plants compared with up to 70% wilted plants for the local check, Hurani. Under on-farm testing over years and across locations, the highest incidence of wilt for Idlib-3 was 3.8%.

Manual harvesting is a major constraint for lentil cultivation in Syria. It has been estimated that about 47% of the total cost of production is required for harvest by manual labor (ICARDA, 1999). Farmers’ cultivars and landraces are semi-spreading types, susceptible to lodging and not suitable for mechanical harvest. Idlib-3 plants have an erect growth habit and strong stems with upright branching and, thus providing lodging resistance and are suitable for mechanical harvesting. It forms its lowest pod at about 15 cm above soil level, which reduces harvest losses. Plants of Idlib-3 are medium-statured (37 cm tall), another advantage for mechanical harvesting. Its leaves and stems are pubescent and devoid of pigmentation. Flowers are white with an average of three flowers per peduncle. Leaflet size is 2.1 cm² and leaves have short tendrils (1.5 cm). It bears an average of 35 pods per plant, with an average of 1.3 seeds per pod. Its seed weight is 3.02 g 100⁻¹ seed, compared with 2.07 g for Hurani. Ground color of testa is brown with patterns in black spots and the cotyledons are bright orange. Idlib-3 flowers 121 d after planting and matures in 153 d. Protein concentration for dehulled seeds of Idlib-3 is 25.7% and the straw has 6.8% protein. Seeds take 35 min to cook.

Seeds of Idlib-3 are maintained by the Germplasm Program of ICARDA at Aleppo, Syria, and are available in small quantities on written request. Plant variety protection will not be sought for Idlib-3.


References


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Registration of ‘Idlib-4’ Lentil

‘Idlib-4’ lentil (Lens culinaris Medikus spp. culinaris) (Reg. no. CV-21, PI 634543) was developed at the International Center for Agricultural Research in the Dry Areas (ICARDA), Aleppo, Syria, and released in 2002 by the General Commission for Scientific Agricultural Research (GCSAR), Ministry of Agriculture and Agrarian Reform, Syria. It is a high yielding, red cotyledon lentil cultivar with lodging resistance and has a high level of resistance to lentil Fusarium wilt disease [caused by Fusarium oxysporum f. sp. lentis (Vasudeva & Srinavanasa) Gordon]. Idlib-4 has been recommended for commercial cultivation throughout zone A (rainfall > 350 mm) in Syria.

Idlib-4 was developed from the cross ILL 5879 × ILL 5714 made at ICARDA in 1985. The female parent, ILL 5879, is an elite breeding line developed at ICARDA from a cross between ILL 39 (Syria) and ILL 479 (Lebanon). The male parent, ILL 5714, was derived from a cross, ILL 500 (Mexico) × ILL 1719 (Ethiopia). The line was developed following a bulk-pedigree method. It was entered into the international testing program as FLIP 92-36L in 1992, and later was designated as ILL 7201 in ICARDA’s Lentil Germplasm Catalog.

Idlib-4 was initially identified by the Syrian national pro-