REGISTRATION OF CROP CULTIVARS

REGISTRATION OF LYONS AND AZTEC CHICKPEAS

'LYONS' CHICKPEA (Cicer arietinum L.) (Reg. no. 45) is a Kabuli type chickpea selected from a landrace introduced into the Pacific Northwest prior to the turn of the century. This landrace which has been grown continuously in local gardens as a pulse crop and a coffee substitute was obtained from Mr. George Lyons of Kendrick, ID. Plants of Lyons were phenotypically selected for uniform seed coat color, seed size and rapid emergence. Lyons produces an upright, branched plant that is approximately 56 cm in height with pinnately compound leaves. The white flowers produce inflated pods which usually bear a single seed. The seeds are rough and have the bleached white color necessary for Kabuli type chickpeas sold in export markets. In seven trials conducted in northern Idaho, Lyons has produced an average seed yield of 2390 kg ha⁻¹, 25% more seed than 'UC-5', the chickpea cultivar currently grown commercially in this area. One hundred seed weight of Lyons has averaged 31.2 g. Lyons emerges rapidly from the cool soils characteristic of this area in the early spring and matures approximately 15 days earlier than UC-5. Seed of Lyons will initially be sold to export markets in the Middle East and Near East. This cultivar has the potential to be utilized domestically as a pulse crop, coffee extender, and petit salad bean.

'Aztec' chickpea (Reg. no. 46) was introduced into the Pacific Northwest by Dr. Matt Silbernagel, USDA-ARS, Prosser, WA. Dr. Silbernagel obtained this line from Dr. Gurdip Singh of Punjab Agriculture University of Ludhiana, India. Dr. Singh obtained the line as ICC 8521 from the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). The exact origin of this line prior to ICRISAT is not known.

The small seed of Aztec has a rough, dark brown seed coat, a characteristic required of the Desi type chickpeas which are used as a pulse crop in India. Aztec has pinnately compound leaves and is only 33 cm in height. Aztec produces purple flowers and small pods containing an average of 1.4 seeds.

In seven trials conducted in northern Idaho, yields of Aztec have been equivalent to those of UC-5, averaging 1800 kg ha⁻¹. One hundred seed weight of Aztec has averaged 15.3 g. Aztec matures approximately 7 days before UC-5. Seed of Aztec will be initially sold to export markets on the Indian subcontinent or to ethnic markets in the USA. Dehulled seed and flour of Aztec could be utilized in a wide variety of domestic products.

Lyons and Aztec were released to increase the potential markets for chickpeas grown in northern Idaho. Seed production of both cultivars will be limited to one generation each of foundation, registered, and certified seed. A limited supply of breeder seed will be maintained by the Idaho Foundation Seed Service, Arizona Agric. Exp. Stn., Univ. of Arizona, Tucson AZ 85721.

R. E. STAFFORD AND D. T. RAY (1)
Published March, 1985

REGISTRATION OF LEWIS GUAR

'LEWIS' GUAR (Cyamopsis tetragonoloba (L.) Taub.) (Reg. no. 47) was developed and released cooperatively by the USDA-ARS and the Texas and Arizona Agricultural Experiment Stations in 1984. Lewis is an F₈ selection from a natural cross, T64001-12-1-B-3-2-B-2 × PI 338780-B, at Chillicothe, TX in 1971. The glabrous parent, PI 12-1-B-3-2-B-2, is a bacterial blight (caused by Xanthomonas cyamopsisis Patel, Dhande and Kulkami) resistant, branching, medium maturing, tall (91 cm), high yielder from the cross, 'Brooks' × 'Mills'. The pubescent parent, PI 338780-B, is a nonbranching, late maturing, tall (122 cm), bacterial blight resistant bulk selection made at introduction, PI 338780. PI 338780 was introduced into India. Lewis arose from two successive single plant selections, a bulk selection, followed by alternating single plant and bulk selections from 1974 through 1978 at Chillicothe.

Leaves and stems of Lewis are glabrous. Leaves and stems of Lewis are 71 cm in height, possess a basal-branching growth habit, and are medium in maturity. The main stem and five basal branches possess short internodes with racemes initiated at each node over the entire plant, as opposed to the alternate-node bearing habit of previous cultivars. Lewis is equal to 'Esser' and 'Hall' in bacterial blight resistance and significantly more resistant than 'Kinman' and 'E2'.

Seed of Lewis are similar to Kinman, averaging 100 seed. Racemes and pods are of medium size, and generally contain 5 to 9 seed. Gum content of the seed is acceptable to industry and equal to that of other released cultivars. Lewis was tested in Texas and Arizona from 1980 through 1983. In 10 Texas trials at 5 locations Lewis averaged 25 and 21% higher seed yield than Esser and Kinman, respectively. The principle unique feature of Lewis is its basal-branching growth habit with racemes initiated at each node, and its high yield potential.

Breeder seed of Lewis will be maintained at the Idaho Agric. Exp. Stn., approved for release by the lentil commission, Idaho Agric. Res. and Ext. Ctr.; former research associate, Univ. of Idaho; and former research associate, Punjab Agric. Univ., Ludhiana, India. Foundation and testing of Lyons and Aztec were provided by the IDAHO LENTIL COMMISSION, the Idaho Bean Commission, and the USDA-ARS. Site approval for the Lyons and Aztec cultivars was obtained from the Foundation Seeds Committee, Univ. of Idaho on 15 Dec. 1983. Approved for publication by the former director of the Idaho Dried Chickpea Foundation Seed Service, Arizona Agric. Exp. Stn., Univ. of Arizona, Tucson AZ 85721.

Published March, 1985

R. E. STAFFORD AND D. T. RAY (1)