Registration of ‘Pk-45921’, a Dual-Season Black Gram Cultivar

‘Pk-45921’ black gram [Vigna mungo (L.) Hepper] (Reg. no. CV- 237, PI 636475) was developed by the Institute of Agricultural Biotechnology and Genetic Resources, National Agricultural Research Center (NARC), Islamabad, Pakistan, and approved for release by the Varietal Evaluation Committee (VEC), Pakistan, for general cultivation.

Black gram is an important summer pulse crop of many Asian countries including Pakistan, India, Bangladesh, Nepal, Thailand, Philippines, and Korea. It is cultivated under a wide range of predominantly rainfed agroecological zones on marginal lands. Black gram seed grains provide significant dietary protein for the populations in this region. It has the potential to fit into the rice–wheat cropping systems of South Asia, but only if cultivars that mature from mid April through June are incorporated. From 1995 to 2000, genetically broad-based, black gram germplasm was evaluated under field conditions for early maturing genotypes with high yield potential (Ghafoor et al., 2001; Ghafoor and Ahmad, 2003). Fifteen genotypes were selected and subsequently tested in 2001, 2002, and 2003 in two seasons (spring and summer) in replicated trials under field conditions at the National Agricultural Research Center (NARC), Islamabad, Pakistan (33°40’N; 73°07’E; 540 meters above sea level). During all three years, experiments were planted with four replications in the second week of April for the spring season and in the last week of July for the summer season. Ten rows of 5-m length were planted with 30 cm and 10-cm inter- and intrarow spacing, respectively. Soil was sandy loam Typic Cambrothid with silty clay variant, deep, well drained and moderately calcareous (Hassan et al., 2003). The pH of the soil was 8.1, EC 0.18 dS m⁻¹, and organic matter 8.6 g kg⁻¹ (Rashid et al., 1994). The genotypes consistently proved their superiority, and out of these, eight matured within 70 d after planting in the spring and summer season, with Pk-45921 being exceptional (Ghafoor et al., 2003).

Pk-45921 was isolated from local landraces collected from the predominantly rainfed Narowal district of Punjab province. It matures within 70 d during both spring and summer seasons producing an average of 800 and 1200 kg ha⁻¹, spring and summer, respectively, over 3 yr. Plants of this cultivar are pubescent, semierect, with plant height averaging 30 cm in the spring and 40 cm in the summer. Seeds are brown with black spots and weigh 4.59 g 100 seed⁻¹. Grain yield of this cultivar is comparable with ‘Mash 1’, an approved black gram variety that matures within 75 d during the summer season but takes 85 d during the spring season. Pk-45921 is tolerant to Mungbean yellow mosaic virus (MYMV), a serious threat in South East Asian countries. Incorporation of early maturing and yielding black gram cultivars in rice–wheat cropping systems of South Asian countries are expected to enhance farm productivity (Zahid et al., 1998).

Seed of this cultivar has been maintained in the gene-bank of the Plant Genetic Resources Program, National Agricultural Research Center, Islamabad, Pakistan, and is available for research purpose on request. It is requested that appropriate recognition of the sources be given if this material contributes to the development of new germplasm, cultivars or parental lines.

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References


