

Role of Plant Introductions in Varietal Development of Pulses in India

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Plant Introduction is the oldest and simplest method of breeding as well as an effective mean to overcome the narrow genetic diversity observed in certain parts of the world. Over a period of time several promising introductions in pulses were made in India from different countries. A total of 11 exotics of chickpea, 2 of pigeonpea, 10 of mungbean, two of lentil, three of Rajmash and three of fieldpea have contributed in the development of 51 cultivars of different pulse crops released in India. Chickpea variety , Pragati, was the outcome of the direct introduction of Cyprus local. Besides, 16 cultivars of chickpea released in India have been developed through utilization of exotic germplasm as an immediate parent in their pedigrees. Some of these varieties are Pusa 261, Pusa 244, Pusa 267, C 104, L 550, L 144, BG 1003, BG 1053, Phule G 12, BG 391, Gaurav and BGD 72. Pigeonpea cultivar, Hy 3C was a secondary selection from exotic line PI 2817-2. Another exotic line Brazil 1-1 has been used as a source of earliness in pigeonpea, which, in combination with NPWR 15, NP 41 and NP 69, has led to the development of early maturing varieties Mukta, Sharad and Pusa Ageti. Promising introductions were extensively utilized in the development of at least seventeen popular cultivars in mungbean. Pusa Vishal, a selection from

AVRDC accession NM 2, released for NWPZ has been becoming popular because of its large seed size (6 g/100 seed weight). Selections made from exotic material introduced from China and Iran have led to the development of Shining Moong 1 and PS 16, respectively. These selections were widely used in crossing programme and subsequently few superior cultivars such as KM 1, Sunaina and RMG 62 were released. Introduction of an early , rust resistant macrosperma line , Precoz, from Argentina has accelerated microsperma x macrosperma crosses in lentil resulting in the development of NDL 1 and DPL 58. Rajmash cultivar Uday was selected from exotic germplasm , EC 94453 introduced from Bulgaria, while Amber and Utkarsh were selected from Columbian accessions, ET 8447 and EC 400431, respectively. The pea variety, Hans was a mutant of L 116, an exotic accession from Sweden , and Harbhajan was a selection from exotic line, EC 33866. Exotic pea accessions for useful traits viz., resistant to pea mosaic virus (EC 271572), resistant to powdery mildew (EC 322745 and EC 381853), tolerant to drought (EC 389374) are yet to be exploited in pea improvement programme. Access to unique and potential valuable germplasm is key to sustained pulse improvement programme.

Plant Introductions in Soybean-Achievements and Opportunities

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Soybean presently covers about 7 million hectares in the country and significantly contributes towards agrarian economy and farm-prosperity. Although soybean has originated in China, the north-eastern region of the Indian sub-continent has a degree of endemic variability. The earlier soybean introductions have been owing to propinquity of these areas with China. Early varieties like Punjab White/ Punjab-1 and a host of strains grouped under Bhat/ Bhatmash/ Kali Tur are also part of this

endemic variability. These have saved the Indian soybean variability from the founder-effect as, later, most of the yellow-seeded varieties and strains of soybean in India have been introduced via USA. Several important genes such as those for resistance to yellow mosaic virus and other diseases, nutritional characteristics, photosensitivity, long-juvenility etc. have been introduced in India, mainly from USA followed by Taiwan, Brazil and other countries. Of late, a sizable number of black-