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INDUCTION OF NEW GENETIC VARIATION THROUGH MUTAGENESIS IN PIGEON PEA

Pigeonpea [Cajanus cajan (L.) Millsp] is an important pulse crop useful for both as human food and animal feed. There has been significant decline in pigeonpea production in India in recent years. Naturally existing genetic variability is not sufficient to achieve the desired improvement. Manual emasculation is very tedious and costly because of small size of its flower. Artificial induction of mutations is the best way to generate new variability to develop new varieties in pigeonpea. In Punjab major threat to pigeonpea cultivation is pod borer and other insect pests. Presently recommended varieties AL 201 and PAU 881 are high yielding, early maturing but their very tall stature poses difficulty for insecticide application. To induce genetic variability, seeds of AL 201 and PAU 881 were got irradiated with Gamma rays from BARC, Mumbai with 300 Gy and 400 Gy. All the M1 plants were harvested separately. In M2 generation, 50 desirable mutants of AL 201 with 300 Gy and 62 plants with 400 Gy dose with desirable traits were identified and classified into different groups. In PAU 881, 46 mutant plants with 300 Gy and 41 plants with 400 Gy dose were identified. The results obtained in both the doses showed that gamma rays induced variability and the mutants showed dwarfness and earliness over the control. In M3 generation, thirteen uniform dwarf lines were identified and 36 single plants were selected for further evaluation.

Country or International Organization

India

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