



Sodium azide induced genetic variability and character association in M_2 generation of mungbean

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Abstract : An experiment was conducted to study the mutagenic effects of different concentrations of sodium azide (0.01%, 0.02%, 0.03%, 0.04% and 0.05%) on ten different characters in mungbean cv. MALACCA LOCAL. High estimates of GCV and PCV were observed for primary branches, seeds per pod and pods per plant. Heritability was high for 100 seed weight, pod length and seed yield per plant. However, high genetic advance as per cent of mean was observed for seed yield per plant, primary branches per plant, pods per plant and 100 seed weight. Correlation coefficient analysis revealed that seed yield per plant exhibited significant and positive association with 100 seed weight, clusters per plant and pods per plant, suggesting that top priority should be given to these characters during selection for isolation of desirable mutant lines of mungbean.

Key Words : Mungbean, Heritability, Genetic advance, Correlation, M_2 generation, Sodium azide

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INTRODUCTION

Mungbean is one of the important and widely cultivated crop in different seasons in India and it ranks third after chickpea and pigeonpea in area and production. It is popular due to easily digestible component of the diet. It also improves soil fertility by adding atmospheric nitrogen. Genetic improvement in any organism rest on the platform architected by two components, genetic variability in the base population for selection of genotypes and stability of the genotypes identified through selection. When the natural genetic variability, becomes depleted through continuous selection endeavors, it becomes imperative to induce variability for selection of elite genotypes. Hybridization has played an important role through shuffling of genetic information of two or more parent genotypes to produce desirable recombination. Plant breeders require altogether new alleles and mutation is the ultimate origin of new genes and mutation has played an important role in the course of plant breeding endeavors.

Mutation breeding offers scope for achieving in many instances what cannot be accomplished through back cross and selection. The advantage of mutation breeding is that it can be applied for changing specific characters in otherwise good varieties by incorporating some useful variations in comparatively shorter period of time than the conventional breeding methods, since the induction of mutation has been accepted as a useful tool in breeding programme. Polygenic variation was earlier estimated in M_2 generation by Tadele *et al.* (2005) in chickpea, Singh and Kumar (2005) in mothbean and Barshile and Apparao (2008) in chickpea. Keeping in view, the impact of mutations in crop improvement, the present experiment was conducted with an objective to study the induced variation and character association in M_2 generation.

MATERIALS AND METHODS

Mungbean genotype namely Malaka Local was selected as parent genotype procured from Malaka village in Allahabad

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