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RESEARCH ARTICLE

Chemical mutagens (Ethyl methane sulphonate and sodium azide) mediated morphological characters and biochemical variations in green gram (*Vigna radiata* L.)

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SUMMARY

Green gram (*Vigna radiata* L.) of the family Leguminosae is an important legume crops in the semi-arid tropics and study was carried out to improve crop yield of two varieties of green gram *i.e* Markiv and Smart to determine the effects of ethyl methane sulphonate and sodium azide (10, 20, 30, 40 mM). The LD_{50} value was observed in 40mM of EMS and 30mM of sodium azide. For inducing mutation various concentration *viz.*, 10, 20, 30 and 40mM @ four hours were applied to 100 seed sample of each concentration and one respective control. The LD_{50} value was observed in 40 mM of EMS and 30 mM of sodium azide. The morphological and yield characters showed significant increment in seed germination, plant height, number of leaves, number of branches per plant, 50 per cent of flowering, number of nodules per plants, number of pods per plant, numbers of clusters per plant, number of grains per pod, 100 seed weight at lower concentrations. At higher concentration of EMS and sodium azide phenotypic, biochemical and yield characters spontaneously decreased. Present investigation concluded the lower concentration of EMS (upto 30mM) and sodium azide (upto 20 mM) performs positively and improved growth and yield parameters studied.

Key Words : Biochemical, Chemical mutagens, Ethyl methane sulphonate, Morphological, Mutation,Sodium azide

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