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## Generation of Variability in Chickpea (*Cicer arietinum* L.) through Mutagenesis

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**Abstract:** With the aim to create additional variability in a bold seeded *desi* chickpea variety HPG-17, seeds were treated with Ethyl Methane Sulphonate (EMS, 0.05, 0.10 and 0.15%), gamma rays (150 Gy, 200 Gy and 300 Gy) and their combination doses. The progeny plants from mutagen treated seed displayed wide range of variation in quantitative traits, however, no mutagen dose specific trend in increase or decrease of mean values of these traits was observed. All the mutagen treatments led to decrease in seed yield as well as harvest index, mutants showing early flowering, early maturity and more number of pods per plant were, however, observed in several treatments notably the 200 Gy (early flowering), 150 Gy + 0.15% EMS (early maturity) and 0.10% EMS (number of pods plant<sup>-1</sup>). Maximum height and fruit bearing branches were observed at 0.05% EMS and 0.15% EMS, respectively. Only two treatments i.e. 300 Gy + 0.15% EMS and 200 Gy yielded mutants with increased 100-seed weight as compared to control. The study demonstrated that gamma rays, EMS and their combinations generated considerable variability in chickpea and that mutation breeding was an effective technique to generate additional variability in chickpea.

Keywords: EMS, Gamma rays, Variability, Induced mutations, Chickpea