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Radiation induced variability and gene effects for polygenic traits in ricebean (*Vigna umbellata* Thunb, Ohwi and Ohashi)

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The study was conducted to induce variability and to identify the important radiation dose for induction of useful variation for maturity, yield and yield attributes. Two varieties of ricebean (BRS-1 and Totru Local) were treated with three different doses of γ-rays (30kR, 40kR and 50kR). Range, mean and co-efficient of variation suggested that the mutagenic treatments had created wide variability. In general, these genetic parameters were higher in M_3 generation than M_2. Both positive and negative shift in mean were observed for all the traits in both the cultivars in both the generations. High heritability coupled with high genetic advance were observed for pods/cluster, seeds/pod and pod length in both BRS-1 and Totru Local indicating that these traits can respond effectively to phenotypic selection. Most of the traits showed significant positive additive and dominance effects at 30 kR dose in both the genotypes indicating the dose to be most effective in inducing variability. Most of the traits showed overdominance suggesting that the selection should be deferred to the later generation so that the additive effects become more pronounced and fixed.

Key words : γ-rays, Induced additive effect, Induced dominance effect, Mutation, *Vigna umbellata*

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