B - 26 MUTATION INDUCTION OF GENETIC VARIABILITY IN QUANTITATIVE CHARACTERS IN GROUNDNUTS (*ARACHIS HYPOGAEA* L.)

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The effect of different doses of gamma radiation on the variability of quantitative characters in M_2 was studied in Vietnam and GN 13 groundnut cultivars. To ensure homozygosity of the control, seeds of a single plant selection, typical of each variety, were multiplied and used for irradiation. They were subjected to 0 (control), 5, 10, 15, 20, 30 and 45 krad gamma radiation at an exposure rate of 2.4 krad/min. M_2 seeds collected from each surviving M_1 plant were bulked per treatment. The variability of 12 quantitative characters was estimated using sixty randomly selected M_2 plants per treatment.

The percent germination and survival of M_1 plants decreased with the increase of radiation dosage. In both varieties, 50% survival under field conditions was between 20 to 30 Krad treatments.

The mean values of characters in M_2 bulk populations were lower than in the control due to the skewness to the left in the frequency distributions in M_2. Highly correlated characters showed similar tendencies in the deviation from control mean and in other variability parameters. The variability of different characters in M_2 bulk populations was higher than in the un-irradiated control. However, for different characters and varieties, the dose of radiation inducing the maximum variability in M_2 was different.

The variability of shelling percentage and seed size was highest in the 10 and 20 Krad treatments. The maximum variability for the number and weight of pods, seed weight per plant, dry plant weight and the number of seeds per pod was recorded in the 30 and 45 Krad treatments in GN 13 and Vietnam respectively.