

GENETIC STUDIES ON YIELD ATTRIBUTING TRAITS IN INDUCED POPULATION OF WHEAT (*TRITICUM AESTIVUM* L.) OF M₂ GENERATION

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ABSTRACT

The current study investigated genetic studies on Yield Attributes Traits viz. days to heading, days to flowering, days to maturity, plant height, number of effective tillers/plant, grains/spike, 100 seed weight and seed yield/plant of mutant wheat in the during Rabi 2010-13 at Central Research Field, Department of Genetics and Plant Breeding, SHIATS, Allahabad, India. Dry seeds of wheat var. K-7903, were irradiated with 00 kR, 05 kR, 10 kR, 15 kR, 20 kR, 25 kR, 30 kR, 35 kR, 40 kR and pre-soaked seeds 00 kR, 05 kR, 10 kR, 15 kR, 20 kR by a ⁶⁰Co - gamma chamber at National Botanical Research Institute, Lucknow, India. The study revealed that gamma irradiation significantly affected all the mentioned traits. The value of genotypic coefficient of variance (GCV) for different qualitative traits were observed ranged from 40kR dry (0.32) to 30kR dry (11.12) and Phenotypic Coefficient of Variance (PCV) was obtained ranged from 1.23 (10kR dry) to 26.00 (40kR dry). The seed yield/plant exhibited maximum GCV (13.86) and PCV (14.61). The maximum heritability (broad sense) and genetic advance was recorded under 15kR dry of no. of effective tillers/plant (46.37, 2.55) respectively, as compared to another treatment in the M₂ generation. The no. of effective tillers/plant showed that maximum heritability (broad sense) (90.06) whereas, the plot stand showed that maximum genetic advance (17.45). High values of heritability and genetic advance indicate the possibility of inducing desirable mutations for polygenic traits accompanied by effective selection in M₂ and later generations. The study indicated that not gamma rays doses are equally effective in generating variability for qualitative traits.

KEYWORDS: wheat, gamma rays, heritability, genetic advance, M₂ generation

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