



## RESEARCH PAPER

# Assessment of genetic variability and association among yield traits in $M_1$ population of menthol mint cv. Kosi

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**Abstract :** For plant genetic improvement, it is of paramount significance to determine genetic components for selecting desirable traits and their interrelationship for enhanced selection efficiency. Menthol mint, a perennial herbaceous aromatic plant cultivated as an annual herb for its commercial valued essential oil. Mint is highly heterozygous in its genetic constitution and vegetatively propagated by stolons, making it a promising material for inducing mutation and creation of desired variability. Mint cultivar Kosi was subjected to gamma irradiation (20 Gy and 40 Gy) and each  $M_1$  plant was analysed for variability and desired characteristics. 42 promising putative mutants selected from  $M_1$  generation based on growth and yield parameters were forwarded to  $M_2$ . Study revealed that the exposure of stolons to gamma rays created significant variability in the plant height, plant spread, number of branches, leaf area, fresh and shade dried herb yield per plant. Further, fresh herb yield was found to have significantly and positively correlated with leaf area, number of branches, plant spread and plant height. Path co-efficient analysis revealed that leaf area and plant spread exhibited positive direct effect on yield. Hence, selection for this character could bring improvement in yield and yield components in menthol mint.

**Key Words :** Correlation, *Mentha arvensis* L., Heritability, Path analysis, Genetic advance

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