ESTIMATION OF GENETIC PARAMETERS AND CLUSTERING OF SEVERAL GENOTYPES OF TAPAK DARA (Catharanthus roseus L. G. Don)

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ABSTRACT

Estimation of genetic parameters aims to support selection in improving tapak dara as ornamental plants. Cluster analysis groups genotypes with the closest similarities into one cluster. This study aimed to estimate genetic diversity, perform clustering analysis, and identify potential tapak dara genotypes for breeding. The study used a Completely Randomized Design (CRD) with a single factor and three replications. The single factor includes 15 genotypes of tapak dara plants such as Vinca Mandarin Orange, Vinca Tattoo Papaya, Vinca Sunstorm Light Blue, Vinca Pink Blush, Vinca White, Vinca Victory Blue, Vinca Pink Curly Hallo, Vinca Ningrum Black Hallo, Vinca Dark Purple, Vinca Dark Red, Vinca Exotic Peach, Vinca Pink Hallo, Vinca Nirvana White Splash, Vinca Exotic Pink, dan Vinca Pink. Observational data were analyzed by ANOVA and continued with Duncan's Multiple Range Test (DMRT) at a 5% significance level. Genetic diversity was estimated using the coefficient of variation and broad-sense heritability. Clustering analysis used K-means, visualized through clustergrams and cluster plots. Three clusters were formed based on vegetative and generative phase characteristics. Stem diameter at 3 weeks and the number of flowers per plant showed high genetic diversity. The potential genotype for further breeding is Vinca Exotic Pink.

***Keywords**: Characterization, Heritability, Genotype, Clustering, Tapak Dara*