

**KERAGAAN KARAKTER KUANTITATIF DAN PARAMETER
GENETIK BEBERAPA GENOTIPE CABAI MERAH KERITING
(*Capsicum annum* L.) GENERASI M2**

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ABSTRAK

Usaha peningkatan produksi cabai merah keriting (*Capsicum annum* L.) dapat dilakukan melalui pemuliaan mutasi. Penelitian bertujuan untuk mengetahui keragaan karakter kuantitatif, nilai keragaman genetik dan nilai heritabilitas serta memperoleh genotipe tanaman sebagai materi genetik generasi M3. Metode penelitian menggunakan Rancangan Acak Kelompok Lengkap (RAKL) satu faktor dengan empat ulangan. Perlakuan meliputi lima genotipe cabai merah keriting generasi M2 dan kontrol varietas Thunder. Penelitian dilakukan pada bulan Februari sampai Juli 2025 di Kebun Percobaan Fakultas Pertanian UPN “Veteran” Yogyakarta. Data dianalisis menggunakan *Analysis of Variance* (ANOVA) dan uji lanjut dengan *Least Significant Difference* (LSD) taraf 5%. Hasil penelitian menunjukkan beberapa genotipe M2 berpengaruh nyata terhadap keragaan karakter kuantitatif pada tinggi tanaman 45 HST dan 60 HST, diameter batang 45 HST dan 60 HST, umur berbunga, umur panen, jumlah buah per tanaman panen ke-4, serta bobot buah per tanaman panen ke-4 dan total. Koefisien keragaman genetik tinggi pada parameter jumlah buah per tanaman panen ke-1, serta bobot buah per tanaman panen ke-1 sampai 4 dan total. Koefisien keragaman fenotipe tinggi pada parameter jumlah buah per tanaman panen ke-1 sampai 4 dan total, bobot buah per tanaman panen ke-1 sampai 4 dan total, dan intensitas serangan virus gemini. Nilai heritabilitas tinggi pada parameter diameter batang 45 HST, umur berbunga, dan bobot buah per tanaman panen ke-4. Genotipe TH2-458-31, TH2-458-105, TH2-458-106, dan TH2-458-146 berpotensi diuji lanjut pada generasi M3.

Kata kunci: cabai merah keriting, heritabilitas, keragaman genetik, mutasi

**PERFORMANCE OF QUANTITATIVE CHARACTERS AND
GENETIC PARAMETERS OF SOME GENOTYPES OF CURLY RED
CHILI (*Capsicum annum* L.) GENERATION M2**

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ABSTRACT

Efforts to increase the production of curly red chili (*Capsicum annum* L.) can be carried out through mutation breeding. This study aimed to evaluate the performance of quantitative traits, estimate genetic variability and heritability values, and identify potential genotypes as genetic material for the M3 generation. The research was conducted using a Randomized Complete Block Design (RCBD) with a single factor and four replications. Treatments consisted of five M2 generation curly red chili genotypes and a control variety (Thunder). The study was carried out from February to July 2025 at the Experimental Field of the Faculty of Agriculture, UPN "Veteran" Yogyakarta. Data were analyzed using Analysis of Variance (ANOVA) and further tested with the Least Significant Difference (LSD) at a 5% significance level. The results showed that several M2 genotypes had a significant effect on quantitative traits, including plant height at 45 and 60 DAP, stem diameter at 45 and 60 DAP, days to flowering, days to harvest, number of fruits per plant at the fourth harvest, as well as fruit weight per plant at the fourth harvest and total fruit weight. A high genetic coefficient of variation was observed in the number of fruits per plant at the first harvest and fruit weight per plant from the first to the fourth harvest and total. A high phenotypic coefficient of variation was found in the number of fruits per plant from the first to the fourth harvest and total, fruit weight per plant from the first to the fourth harvest and total, and the intensity of gemini virus infection. High heritability values were obtained for stem diameter at 45 DAP, days to flowering, and fruit weight per plant at the fourth harvest. Genotypes TH2-458-31, TH2-458-105, TH2-458-106, and TH2-458-146 showed potential for further evaluation in the M3 generation.

Keywords: curly red chili, heritability, genetic diversity, mutation