

## INTISARI

Penelitian yang berjudul "Pengujian Keceragaman Plodi Pada 10 Galur Tetua Betina Semangka Tanpa Biji Dengan Karakterisasi Morfologi dan Flow Cytometry" bertujuan untuk memastikan tingkat ploiditas dan menganalisis keragaman morfologi pada 10 galur tetua betina semangka tanpa biji (*seedless*). Penelitian dilakukan di Desa Pujon Lor, Malang, Jawa Timur, dari September 2023 hingga Januari 2024. Bahan penelitian meliputi benih dari 10 galur tetua betina dan tanaman cek (diploid 2x dan triploid 3x), dengan alat utama Flow Cytometry Guava easyCyte™ HT System, mikroskop elektrik, dan alat pengamatan morfologi. Variabel kuantitatif yang diamati mencakup tinggi tanaman, diameter batang, jumlah daun, panjang lebar daun, bobot buah, panjang buah, diameter buah, tebal daging buah, tebal kulit buah, derajat kemanisan (°Bx) serta jumlah biji. Sedangkan variabel kualitatif meliputi bentuk kotiledon, bentuk derajat cuping, warna daun, warna batang, warna kulit buah, dan bentuk buah. Percobaan dilakukan menggunakan metode single plot terdiri dari 10 populasi, tiap populasi ditanam 25-89 tanaman. Hasil penelitian menunjukkan bahwa semua galur memiliki tingkat ploiditas yang seragam pada tingkat tetraploid (4x), namun beberapa galur menunjukkan variasi karakter akibat segregasi, terutama pada bentuk kotiledon, dan cuping utama. Koefisien keragaman genetik rendah pada hampir semua karakter kualitatif yang diuji. Sedangkan nilai koefisien keragaman fenotipe menunjukkan kriteria rendah-besar. Nilai duga heritabilitas tiap karakter pada populasi menunjukkan hasil yang rendah karena pengaruh signifikan dari faktor lingkungan. Seleksi lebih lanjut diperlukan untuk meningkatkan homogenitas karakter.

Kata kunci: ploidi, flow cytometry, keragaman, heritabilitas

## ABSTRACT

*The research titled "Ploidy Uniformity Testing of 10 Seedless Watermelon Female Parental Lines Using Morphological Characterization and Flow Cytometry" aimed to ensure the ploidy levels and analyze morphological diversity in 10 female parental lines of seedless watermelon. The study was conducted in Pujon Lor, Malang, East Java, from September 2023 to January 2024. The materials included seeds from 10 female parent lines and check plants (2x and 3x), with key instruments being the Guava easyCyte™ HT System Flow Cytometry, an electric microscope, and morphological observation tools. Quantitative variables observed included plant height, stem diameter, number of leaves, leaf length and width, fruit weight, fruit length, fruit diameter, flesh thickness, rind thickness, sweetness level (°Bx), and seed count. Qualitative variables included cotyledon shape, degree of lobe shape, leaf color, stem color, fruit rind color, and fruit shape. The experiment was conducted using a single plot method with 10 populations, each population containing 25-89 plants. The results showed that all lines had uniform ploidy levels at the tetraploid (4x) level, though some lines exhibited character variation due to segregation, particularly in cotyledon shape and primary lobe. The coefficient of genetic variation was low for almost all tested qualitative characters, while the phenotypic variation coefficient ranged from low to high. The estimated heritability for each character in the population showed low results due to the significant influence of environmental factors. Further selection is needed to improve character homogeneity.*

*Keywords: ploidy, flow cytometry, diversity, heritability*