

Pengaruh waktu pengambilan pucuk daun terhadap fase pembelahan mitosis hibiscus rosa-sinensis l. variasi single pink besar = The effect of leaf shoots sampling time on the mitotic phases of hibiscus rosa-sinensis l. large pink single flower

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Abstrak

ABSTRAK

Penelitian dilakukan untuk mengetahui pengaruh waktu pengambilan pucuk daun terhadap fase pembelahan sel dan mengetahui waktu optimum pengambilan pucuk daun untuk mengamati fase pembelahan sel Hibiscus rosa-sinensis L. variasi single pink besar. Waktu pengambilan pucuk yang dilakukan yaitu pada pukul 08:00--16:00 WIB, dengan jarak waktu dua jam yaitu pada pukul 08:00, 10:00, 12:00, 14:00, 16:00 WIB. Metode squash dengan pewarna Aceto-orcein digunakan untuk pembuatan sediaan kromosom. Tahapan perlakuan meliputi perendaman pucuk daun di dalam air dingin selama 3 jam, fiksasi dalam larutan Carnoy selama 24 jam, dan hidrolisis dalam larutan HCl 5N selama 30 menit. Data perhitungan jumlah setiap fase sel interfase, profase awal, profase akhir, metafase, anafase, dan telofase dianalisis dengan menggunakan uji Kruskal-Wallis. Jumlah profase akhir yang tinggi, serta jumlah interfase, metafase, anafase, dan telofase yang rendah digunakan untuk waktu optimum pengambilan pucuk untuk studi kromosom. Hasil uji Kruskal-Wallis menunjukkan bahwa waktu pengambilan pucuk berpengaruh terhadap fase sel interfase, profase awal, dan profase akhir pucuk daun Hibiscus rosa-sinensis. Pukul 10:00 merupakan waktu optimum pengambilan pucuk untuk studi kromosom. Morfologi kromosom Hibiscus rosa-sinensis L. variasi single pink besar yang diperoleh berukuran kecil, dengan jumlah kromosom banyak $2n=ca. 69--111$ dan bersifat mixoploid.

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ABSTRACT

The research conducted to determine the effect on collecting the leaf shoots time of the phase of cell division and to find out the optimal time of collecting the leaf shoots time to observe the phase of cell division of Hibiscus rosa sinensis. Period time of collection the leaf shoots is from 08 00 AM to 16 00 PM, with two hours gap each at 08 00, 10 00, 12 00, 14 00, 16 00 pm. The squash method with Aceto orcein dye used for making preparation of chromosomes. Treatment steps include soaking the leaf shoots in cold water for 3 hours, fixation in Carnoy solution for 24 hours, and hydrolysis in 5N HCl solution for 30 minutes. The total calculated data on the number of each cell phase interphase, early prophase, late prophase, metaphase, anaphase, and telophase were analyzed by Kruskal Wallis test. The high number of resulted prophase, as well as low number of interphase, metaphase, anaphase, and low telophase are used to determine the optimum time of collecting the leaf shoots for chromosome studies. The result of Kruskal Wallis test showed that shoots sampling time had a significantly effect on interphase, early prophase, and late prophase of cell phase Hibiscus rosa sinensis leaf shoots. The optimum time of collection the leaf shoots for chromosome study is at 10 00 The results showed that leafs shoots sampling at 10 00 is the optimum time of shooting for chromosome studies. The chromosome morphology of Hibiscus rosa sinensis L. large single pink flower resulted small size, with numerous chromosomes number $2n ca. 69 111$ and mixoploid.