

**MIKROSPOROGENESIS DAN ULTRASTRUKTUR MIKROSPORA
SERTA PENYIMPANAN SERBUK SARI TANAMAN KEPEL
[*Stelechocarpus burahol* (Blume) Hook. f. & Thomson]**

INTISARI

Tanaman kepel memiliki banyak manfaat, keberadaannya sudah mulai langka, dan memiliki filosofi budaya tinggi. Bunga betina dan jantan tidak selalu muncul bersamaan menyebabkan penyerbukan kurang baik, sehingga produksi buah tidak optimal. Penyerbukan buatan sebagai upaya peningkatan produksi buah memerlukan serbuk sari viabel. Penelitian ini bertujuan untuk mendapatkan informasi tentang mikrosporogenesis, ultrastruktur serbuk sari, dan viabilitas serbuk sari setelah disimpan. Mikrosporogenesis diamati pada sediaan awetan bunga jantan berumur 7, 9, 11, 12, 13, 15, dan 18 hari. Sediaan awetan bunga jantan dibuat dengan metode Ruzin (1999). Sediaan serbuk sari dibuat dengan metode asetolisis. Struktur serbuk sari dianalisis menggunakan SEM (*Scanning Electron Microscope*). Serbuk sari disimpan dalam 3 variasi suhu yaitu $\pm 25^{\circ}\text{C}$, 4°C , dan -18°C selama 5 minggu. Viabilitas serbuk sari diuji dengan *Aniline Blue* 1%, TTC (*triphenyl tetrazolium chloride*) 1% dan perkecambahan *in vitro* dalam sukrosa 15%. Hasil pengamatan menunjukkan bahwa kepala sari bertipe tetrasporangiat. Dinding kepala sari terdiri atas 1 lapisan sel epidermis, sel-sel endotesium, dan 2-3 sel lapisan tengah serta sel tapetum bertipe sekretori. Pada saat meiosis, sitokinesis bertipe suksesif dan terbentuk tetrad mikrospora bertipe tetrahedral. Serbuk sari bersifat soliter, berbentuk *prolate spheroidal* (membulat), apertura bertipe kolpus, dan ornamentasi bertipe rugulatus. Hasil uji viabilitas serbuk sari dengan TTC 1% dan perkecambahan *in vitro* menunjukkan penurunan viabilitas pada minggu pertama untuk semua perlakuan suhu. Pada minggu berikutnya, perlakuan suhu -18°C menghasilkan viabilitas relatif lebih tinggi dibanding 2 perlakuan lainnya. Hasil uji *Aniline Blue* 1% menunjukkan bahwa viabilitas tidak menurun drastis selama periode penyimpanan. Hasil uji *Aniline Blue* 1% tidak sesuai dengan hasil uji TTC 1% dan perkecambahan *in vitro*.

Kata kunci: *Stelechocarpus burahol*, kepel, mikrosporogenesis, serbuk sari.

**MICROSPOROGENESIS AND ULTRASTRUCTURE MICROSPORE
AND STORAGE OF POLLEN KEPEL [*Stelechocarpus burahol* (BLUME)
HOOK. f. & THOMSON]**

ABSTRACT

Kepel is a plant, which is already scarce. It has many benefits and a high cultural philosophy. Both male and female flowers do not always appear asynchronous that causing poorly pollinating, so that fruit production is not optimal. Artificial pollination to increase fruit production requires viable pollen. This study was aimed to obtain information about microsporogenesis, ultrastructure of pollen and pollen viability after they were stored. Microsporogenesis was observed by permanent slide of male flower at the age of 7, 9, 11, 12, 13, 15, and 18 days respectively. The permanent slide was made according to the method of Ruzin (1999). Permanent slide of pollen was prepared by the acetolysis method. The structure of pollen was analyzed using SEM (Scanning Electron Microscopy). The pollen was stored in three variations of temperature is $\pm 25^{\circ}\text{C}$, 4°C and -18°C , for 5 weeks. Pollen viability was tested with Aniline Blue 1%, TTC (triphenyl tetrazolium chloride) 1% and germination *in vitro* with growing medium in sucrose 15%. The result of observations showed that the anthers had tetrasporangiate type. Epidermal cells were thin and endothelial mature cells showed fibrous thickening. The middle layer consists of 2-3 layers of cells. Tapetum is secretory type. The cytokinesis is successive type and it was form a tetrahedral tetrad. The pollens were solitary. It has prolate spheroidal shaped (circular shape) with the aperture is colpate type and ornamentation is rugulate type. The results of pollen viability test by TTC 1% and germination *in vitro* showed that the viability decreased in the first week and for all temperature treatment. In subsequent weeks, the treatment temperature of -18°C produce relatively higher viability than the two other treatments. Test results of Aniline Blue 1% test indicates that viability was not decrease dramatically during the storage period. The result of Aniline Blue 1% test was not in accordance with the results TTC 1% test and germination *in vitro* test.

Keywords: *Stelechocarpus burahol*, kepel, microsporogenesis, pollen