

PERKEMBANGAN BUNGA, MIKROSPOROGENESIS, DAN ULTRASTRUKTUR POLEN CIPLUKAN (*Physalis angulata* L.)

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INTISARI

P. angulata L. atau ciplukan merupakan anggota famili Solanaceae yang berperan penting dalam bidang kesehatan. Ciplukan memiliki struktur sepal yang unik. Fase pembungaan berkaitan erat dengan gametogenesis dan embriogenesis. Proses gametogenesis diawali mikrosporogenesis dan megasporogenesis. Mikrosporogenesis dapat diamati melalui perkembangan antera. Polen merupakan mikrospora masak atau siap untuk polinasi. Ultrastruktur polen merupakan salah satu karakter identifikasi pada ciplukan. Penelitian ini bertujuan untuk mengamati struktur morfologi bunga, mikrosporogenesis, dan ultrastruktur polen ciplukan. Prosedur kerja penelitian ini yaitu ; pengambilan data morfologi bunga ciplukan, preparasi antera dengan metode *embedding*, dan preparasi polen untuk diamati melalui *Scanning Electron Microscope (SEM)*, serta analisis kualitatif. Hasil pengamatan menunjukkan bahwa bunga ciplukan merupakan bunga lengkap dan sempurna, bertipe tunggal dengan letak aksilar serta memiliki 5 sepal. Mahkota berwarna kuning muda dengan noda kuning tua pada bagian leher mahkota. Antesis membutuhkan waktu 11 - 13 hari. Antera berjumlah 5 berlepasan dan berwarna kuning pucat. Diameter dan panjang kuncup termuda serta bunga saat antesis berturut-turut ± 1 mm ; $\pm 2,3$ mm dan ± 9 mm. Mikrosporogenesis berlangsung di dalam lokuli antera. Dinding antera terdiri dari 4 – 5 lapisan, yaitu epidermis, endotesium, lapisan tengah, dan tapetum. Pembentukan dinding antera bertipe *dycotiledonous*. Jaringan tapetum bersifat sekresi. Pembentukan mikrospora berawal dari sel induk mikrospora dan berkembang menjadi mikrospora soliter melalui tetrad mikrospora bertipe tetrahedral, serta mengalami sitokinesis yang bersifat simultan. Polen ciplukan berbentuk *oblate-spheroidal* hingga *subprolate*. Bukaan berbentuk *colpus* dan berjumlah 3 (*tricolpate*), memiliki ornamentasi *verrucate*, dan bidang kutub bersifat *3-sides sided convex*.

Kata kunci : bunga, ciplukan, mikrosporogenesis, polen

**FLOWER DEVELOPMENT, MIKROSPOROGENESIS, AND POLLEN
ULTRASTRUCTURES OF CUTLEAF GROUND CHERRY (*Physalis
angulata* L.)**

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ABSTRACT

P. angulata L. or cutleaf ground cherry is a member of the family Solanaceae which plays an important role in the health field. It has a unique petal. The flowering phase is closely related to gametogenesis and embryogenesis. The process of gametogenesis begins with microsporogenesis and megasporogenesis. Microsporogenesis is observed through anther development. Pollen is a ripe microspore. Pollen ultrastructures is one of typical characters of identification in this plant. The objects of this study was to observe the structure of flowers morphology, microsporogenesis, and pollen ultrastructure of golden berry. Stages of experiment were ; retrieval of morphological data, anther anatomy preparation with *embedding* methods, and preparation of pollen to be observed through *Scanning Electron Microscope (SEM)*, and qualitative results analysis. The observations showed that the flower is complete and perfect flowers. It is single flower and grow axillary with 5 sepals and petals. Petals is light yellow with dark yellow stains on the neck of the crown. The anthesis took 12-14 days. The 5 stamens are loose and pale yellow. The youngest to anthesis diameter and length of buds are respectively ± 1 mm; ± 2.3 mm and ± 9 mm. Microsporogenesis occurs in loculi. The anther wall consists of 4-5 layers which are epidermis, endothesium, middle layer, and tapetum. Anther walls formation is *dycotiledonous*. Tapetum is secretory. Microspore originates from microspore mother cell and develops into adult microspore in tetrahedral tetrad microspore which experience simultaneous cytokinesis. The pollen is oblate-spheroidal to subprolate. The openings are tricolpate, verrucate ornamentation, and 3-sides sided convex .

Keywords : cutleaf ground cherry, flowers, microsporogenesis, pollen

