

Perbandingan Anatomi Daun Dan Akar Pada Lima Spesies Anggrek Phalaenopsis (Orchidaceae) Di Indonesia = Anatomy Comparison of Leaf and Roots Five Species Phalaenopsis (Orchidaceae) in Indonesia

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Abstrak

Penelitian mengenai studi anatomi daun dan akar pada lima spesies Phalaenopsis telah dilakukan. Penelitian dilakukan untuk mendeskripsikan anatomi daun dan akar untuk melengkapi karakter diagnostik dan melihat dugaan potensi adaptasi terhadap cekaman kekeringan. Spesies yang digunakan adalah *P. amabilis*, *P. cornu-cervi*, *P. fimbriata*, *P. bellina* dan *P. tetraspis*, lalu dianalisis struktur kontur kutikula, bentuk sel epidermis, bentuk sel mesofil, bentuk sel tetangga, bentuk sel velamen, bentuk eksodermis, dan bentuk endodermis sebagai data kualitatif. Ketebalan daun, ketebalan kutikula, ketebalan epidermis, ketebalan mesofil, luas jaringan pembuluh primer, luas floem, luas xylem, luas akar, ketebalan velamen, ketebalan korteks, ketebalan eksodermis, ketebalan endodermis, luas jaringan pembuluh primer, luas xilem dan luas floem dianalisis sebagai data kuantitatif. Daun dan akar disayat menggunakan hand-sliding microtome untuk pengamatan sayatan melintang, kemudian diamati di bawah mikroskop cahaya. Daun dikerik untuk mendapatkan pengamatan sayatan paradermal. Hasil pengamatan karakter kualitatif dan kuantitatif kelima spesies Phalaenopsis memiliki karakter pembeda pada persebaran stomata, tipe stomata, kontur kutikula, tipe velamen, dan luas stele. Daun Phalaenopsis memiliki variasi bentuk stomata berdasarkan tipe sel tetangga, yaitu tipe tetrasitik, parasitik dan anisositik. daun *P. amabilis* memiliki stomata amphistomatatik. Daun *P. tetraspis* memiliki kontur kutikula adaksial dan abaksial berbentuk ridge. Akar *P. cornu-cervi* memiliki velamen uniseriatus, dan luas stele *P. fimbriata* memiliki rerata 0,3 mm². Hasil penelitian telah dilakukan untuk melengkapi data terhadap karakter anatomi daun dan akar.

.....The study aimed to determine the anatomical character of Phalaenopsis to complement the diagnostic character and the alleged potential for adaptation has been carried out. The objective was to describe leaf and root anatomy structure and compare those structures between species. *P. amabilis*, *P. cornu-cervi*, *P. fimbriata*, *P. bellina* and *P. tetraspis* was used in the research. Leaf and root anatomical differences was analyzed by qualitative and quantitative approach. Qualitative data includes the presence cuticle, epidermal cell, mesophyll shape, velamen shape, exoderm shape, and endoderm shape. Quantitative data includes cuticle thickness, epidermal thickness, mesophyll thickness large area of phloem, large area of xylem, velamen thickness, exoderm thickness, endoderm thickness area of stele, area of phloem, and area of xylem. Leaf and root dissected by handsliding microtome, then observed under light microscope for crosssection observation. Leaf scraped for paradermal observation. Result shows differ character in cuticle, stomatal distribution, stomata type and area of stele. The qualitative and quantitative characters of the five species of Phalaenopsis have distinguishing characteristics in stomata distribution, stomata type, cuticle contour, velamen type, and stele area. Phalaenopsis leaves have a variety of stomata forms based on neighboring cell types, which are tetracytic, parasitic and anisocytic types. *P. amabilis* leaves have amphistomatatic stomata. *P. tetraspis* leaves have a ridge-shaped adaxial and abaxial contour. The root of *P. cornu-cervi* has uniseriatus velamen, and the extent of *P. fimbriata* stele has an average of 0.3 mm². The results of the research have been carried out to complete the data on the anatomical character of leaves and roots.