

**Karakter Morfologis dan Anatomis
Organ Vegetatif Empat Kultivar Labu Kuning
(*Cucurbita moschata* (Duch.) Poir.**

INTISARI

Labu kuning atau waluh (*Cucurbita moschata* (Duch.) Poir. merupakan salah satu tanaman yang mempunyai potensi gizi dan komponen bioaktif yang baik, namun belum dimanfaatkan secara optimum. Adaptasi tanaman terhadap lingkungan merupakan rekayasa secara khusus sifat-sifat karakteristik anatomi dan fisiologi untuk memberikan peluang keberhasilan menyesuaikan kehidupan di habitat tertentu dan berpengaruh nyata terhadap keragaman tanaman di dalam satu spesies. Oleh sebab itu, karakter anatomi dan fisiologi pada tanaman dapat dijadikan indikator terhadap keragaman kultivar. Tujuan penelitian ini adalah untuk mengetahui perbedaan struktur morfologi dan anatomi serta mengetahui klasifikasi intraspesies empat kultivar *C. moschata* di wilayah Kabupaten Bantul. Empat kultivar labu kuning, yang diberi nama kultivar Bokor I, Bokor II, Kelenting I, dan Kelenting II, dikoleksi dari 3 lokasi berbeda di Kabupaten Bantul. Sampel yang diambil yakni akar, batang dan daun dari tanaman labu kuning yang berumur sekitar 2-4 bulan. Epidermis daun dan batang disayat secara membujur dan dibuat secara semi permanen. Pembuatan preparat penampang melintang akar, batang dan daun digunakan metode penyelubungan parafin (*embedding*). Preparat anatomi diamati di bawah mikroskop cahaya dan menggunakan *software* Optilab. Data kuantitatif yang didapatkan dari pengamatan berbagai karakter anatomis kemudian dianalisis menggunakan *software* SPSS dengan analisis tabel ANAVA (Analisis Variansi) dilanjutkan uji DMRT (*Duncan's Multiple Range Test*). *Scoring* data *multi-state* pada masing-masing karakter anatomis ditransformasi menggunakan *software* MVSP (*Multi Variate Statistical Package*) dengan metode UPGMA (*Unweighted Pair of Group Method Using Arithmetic Average*) dan dihasilkan dendrogram yang menunjukkan tingkat similaritas karakter dari keempat kultivar *C. moschata*. Hasil penelitian menunjukkan adanya variabilitas anatomis yang rendah pada akar, batang dan daun pada keempat kultivar *C. moschata*, dengan tingkat similaritas antara 92,8%. Tingkat similaritas yang terbentuk menghasilkan 2 grup klaster, yaitu kultivar Bokor I yang mirip dengan Kelenting I dengan tingkat similaritas 95,6%, dan kultivar Kelenting II yang mirip dengan Bokor II dengan tingkat similaritas 96%. Ada 8 karakter yang berperan penting dalam pengelompokan hubungan kekerabatan antar kultivar dari empat kultivar *C. moschata*, yaitu panjang sel epidermis akar, jumlah dan panjang trikoma glandular batang, jumlah trikoma non-glandular batang, jumlah trikoma glandular dan jumlah sel epidermis atas daun, jumlah dan panjang trikoma glandular epidermis bawah daun.

Kata Kunci: variabilitas, klasifikasi, labu kuning, kultivar, anatomi

**Morphological and Anatomical Characters
of Vegetative Organ in Four Cultivars of Pumpkin
(*Cucurbita moschata* (Duch.) Poir.**

ABSTRACT

Pumpkin (*Cucurbita moschata* (Duch.) Poir. is one plant species potential for nutrition and bioactive components, but it has not been utilized optimally. Plants adaptation to the environment is specifically engineered traits characteristic of anatomy and physiology to give chances of success adapting to a particular habitat and significant effect on plants diversity within a single species. Therefore, the characters of anatomy and physiology of the plants can be used as an indicator of the diversity of cultivars. The aim of this research was to characterize roots, stems and leaves morphology and anatomy of four cultivars to determine the classification of the four cultivars of *C. moschata* intraspecies in Bantul area. Four cultivars of pumpkin, which were named as cultivar Bokor I, Bokor II, Kelenting I, and Kelenting II, were collected from three different locations in Bantul. Samples taken were roots, stems and leaves of plants grown, about 2-4 months. Anatomical preparation consisting of longitudinal and transverse cross-section incision. Epidermis of leaves and stems were prepared longitudinally using semi-permanent method, while preparation for the cross-section of roots, stems and leaves were used methods of paraffin embedding. Anatomical slides were subsequently observed under a light microscope connected to Optilab software with different magnifications. Quantitative data obtained from observation of various anatomical characters were analyzed using SPSS (Statistical Package for Social Science) software, ANOVA (Analysis of Variance), continued with DMRT (Duncan's Multiple Range Test). Furthermore, the multi-state state at each anatomical characters were scored and transformed using MVSP (Multi Variate Statistical Package) software with UPGMA (Unweighted Pair of Group Method Using Arithmetic Average) and the resulting dendrogram showing the degree of similarity of four cultivars of *C. moschata*. The results showed that anatomical variability of the roots, stems and leaves of four cultivars of *C. moschata* is low, the level of similarity is about 92.8%. Levels of similarity formed produced 2 cluster groups, which were cultivar Bokor I is similar to cultivar Kelenting I within 95.6% level of similarity, and cultivar Kelenting II is similar to cultivar Bokor II within 96% level of similarity. There were 8 characters that have important roles in classification between cultivars of four cultivars of *C. moschata*, they were length epidermal cells of root, number and length of glandular trichome of stem, number of non-glandular trichome of stem, number of epidermal cells and glandular trichome on upper epidermal of leaves, and number and length of glandular trichome on lower epidermal of leaves.

Keywords: variability, classification, pumpkin, cultivar, anatomy