

## HUBUNGAN KEKERABATAN FENETIK *Curcuma* spp. DI YOGYAKARTA DAN SEKITARNYA BERDASARKAN KARAKTER MORFOLOGIS, ANATOMIS DAUN DAN RIMPANG

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### INTISARI

*Curcuma* spp. atau temu-temuan (Zingiberaceae) memiliki nilai ekonomi dalam hal obat tradisional. Banyaknya variasi morfologis pada *Curcuma* spp. menyebabkan kesulitan dalam identifikasi dan membedakan antar spesies *Curcuma*. Sehingga dilakukan pengamatan karakter morfologis dan anatomis spesifik serta hubungan kekerabatan antar spesies *Curcuma*. Penelitian ini bertujuan untuk mengetahui karakter spesifik dan mengkaji hubungan kekerabatan *Curcuma* spp. berdasarkan karakter morfologis dan anatomis. Penelitian dilakukan pada bulan Juli 2018-Februari 2019 di Kab. Bantul, Gunungkidul, Sleman, dan Karanganyar. Pengamatan karakter anatomis pada rimpang dan daun. Analisis data dilakukan secara deskriptif dan kuantitatif/numerik. *Clustering analysis* dengan rumus *Gower General Similarity Coefficient* dan dilakukan *Principal Component Analysis* (PCA) untuk mengetahui peran tiap-tiap karakter dalam pengelompokkan. Hasil penelitian menemukan 7 spesies dari 23 OTUs yang diamati (*C. aeruginosa*, *C. domestica*, *C. mangga*, *C. xanthorrhizha* masing-masing 4 OTUs, *C. soloensis*, *C. zedoaria* masing masing 3 OTUs, dan *C. heyneana* 1 OTUs) menunjukkan karakter morfologis spesifik terdapat pada warna daging rimpang, warna batang semu, dan warna midrib. Karakter anatomis spesifik terdapat pada warna sel sekresi, dan keberadaan trikoma pada daun dan rimpang. Dendrogram menunjukkan pada garis fenon 0,70 terdapat 2 kelompok yaitu kelompok A (*C. soloensis* dan *C. domestica*) yang menyatu pada IS 0,760 dan kelompok B (*C. aeruginosa*, *C. mangga*, *C. heyneana*, *C. soloensis*, *C. xanthorrhizha*, dan *C. zedoaria*) yang menyatu pada IS 0,654, artinya *C. soloensis* dan *C. domestica* memiliki hubungan kekerabatan yang dekat. Pada garis fenon 0,80 terdapat 5 kelompok yaitu *C. domestica*, *C. soloensis*, *C. xanthorrhizha*, *C. zedoaria*-*C. mangga*-*C. heyneana* dan *C. aeruginosa*.

Kata kunci: *Curcuma* spp., morfologis, anatomis, analisis fenetik

**PHENETIC RELATIONSHIPS OF *Curcuma* spp. IN YOGYAKARTA AND ITS SURROUNDING AREA BASED ON MORPHOLOGICAL, LEAF AND RHIZOME ANATOMICAL CHARACTERS**

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***ABSTRACT***

*Curcuma* spp. known as ginger (Zingiberaceae) has economic value in traditional medicine. Many morphological variations in *Curcuma* spp. caused difficult in identification and classification among species of *Curcuma*. Hence observation of morphological, anatomical characters, and phenetic relationships among *Curcuma* species is important. This research aimed to determine the specific characters of *Curcuma* spp. and examine phenetic relationship *Curcuma* spp. based on morphological and anatomical characters. The research was conducted in July 2018-February 2019 in Bantul, Gunungkidul, Sleman, and Karanganyar region. Observation of anatomical characters was conducted on leaf and rhizome. Data was analyzed according to descriptive and quantitative/numerical. Clustering analysis with Gower General Similarity Coefficient and Principal Component Analysis (PCA) was carried out to determine the role of each characters in grouping. The result of the researc found 7 species from 23 OTUs observed (*C. aeruginosa*, *C. domestica*, *C. mangga*, *C. xanthorrhizha* 4 OTUs each, *C. soloensis*, *C. zedoaria* 3 OTUs each, and *C. heyneana* 1 OTUs) showed that specific morphological characters were found in the flesh color rhizome, pseudostem color, and midrib color. Specific anatomical character occurred in secretions cell color and the present of trichomes in leaf and rhizome. The dendrogram shows in 0.70 phenon line consisted of 2 groups that are A group (*C. soloensis* and *C. domestica*) fused in 0.760 similarity index and B group (*C. aeruginosa*, *C. mangga*, *C. heyneana*, *C. soloensis*, *C. xanthorrhizha*, and *C. zedoaria*) fused in 0.654 similarity index, that means *C. soloensis* and *C. domestica* have close phenetic relationship. In 0,80 phenon line consisted of 5 groups which were *C. domestica*, *C. soloensis*, *C. xanthorrhizha*, *C. zedoaria*-*C. mangga*-*C. heyneana*, and *C. aeruginosa*.

Keywords: *Curcuma* spp., morphological, anatomical, phenetic analysis