KEANEKARAGAMAN GENETIK DAN HUBUNGAN KEKERABATAN *Rhizophora apiculata* dan *Rhizophora mucronata* DARI KALIMANTAN TIMUR BERDASARKAN PENANDA *SIMPLE SEQUENCE REPEAT*

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INTISARI

Mangrove dari famili Rhizophoraceae termasuk kategori pantropis terdiri dari 15 genus dengan perkiraan jumlah spesies berkisar antara 120-140 spesies. Genus Rhizophora merupakan taksa dominan dari hutan mangrove di seluruh daerah tropis. Spesies *Rhizophora apiculata* dan *Rhizophora mucronata* banyak dijumpai di Kawasan Paser, Teluk Balikpapan, dan Delta Mahakam, Provinsi Kalimantan Timur. Permasalahan dalam penelitian ini yaitu bagaimana keragaman genetik dan perbandingannya pada spesies *R. apiculata* dan *R. mucronata* dari populasi, interpopulasi, dan antarpopulasi di Kalimantan Timur berdasarkan penanda SSR serta bagaimana hubungan kekerabatan fenetik *R. apiculata* dan *R. mucronata* berdasarkan penanda SSR. Penelitian ini menggunakan 4 primer (Rm111, Rm121, RapT09, dan RapT17) dan metode ekstraksi menggunakan Genomic Plant DNA Mini Kit (Geneaid). Keragaman genetik *R. apiculata* dan *R. mucronata* menunjukkan nilai keragaman yang tinggi dan heterozigositas yang rendah. Hubungan kekerabatan fenetik *R. apiculata* dan *R. mucronata* menujukkan adanya overlap antar populasi sehingga membentuk kelompok secara acak bukan berdasarkan lokasi populasi. Data keragaman genetik dan hubungan kekerabatan *R. apiculata* dan *R. Mucronata* yang didapatkan dapat digunkan sebagai dasar dalam menyusun rekomendasi dan strategi aktivitas konservasi kawasan mangrove.

Kata kunci : genetika populasi, mikrosatelit, Rhizoporaceae, sistematika molekular

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ABSTRACT

Mangroves from the Rhizophoraceae family are classified as pantropical and consist of 15 genera, with an estimated 120-140 species. The genus *Rhizophora* is the dominant taxon of mangrove forests throughout the tropical regions. The species *Rhizophora apiculata* and *Rhizophora mucronata* are commonly found in the Paser region, Balikpapan Bay, and the Mahakam Delta in East Kalimantan Province. The issue addressed in this study is the genetic diversity and its comparison between *R. apiculata* and *R. mucronata* across populations, interpopulations, and between populations in East Kalimantan, based on SSR markers, as well as the phylogenetic relationship between *R. apiculata* and *R. mucronata* based on SSR markers. This research utilized four primers (Rm111, Rm121, RapT09, and RapT17) and the Geneaid Extraction Plant Kit method for DNA extraction. The genetic diversity of *R. apiculata* and *R. mucronata* revealed high diversity values and low heterozygosity. The phylogenetic relationship between *R. apiculata* and *R. mucronata* showed overlap between populations, forming random groupings rather than being based on population location. The genetic diversity data and phylogenetic relationships obtained from this study can serve as a basis for developing recommendations and strategies for mangrove conservation activities.

Keyword: population genetic, microsatellite, Rhizoporaceae, molecular systematic