

# HUBUNGAN FILOGENETIK MOLEKULER KULTIVAR PISANG (*Musa spp.*) DI BALI BERDASARKAN SEKUEN DNA DAERAH ITS 1

## ABSTRAK

Analisis filogenetik molekuler untuk mengevaluasi kekerabatan antar kultivar pisang (*Musa spp.*) di Bali berdasarkan sekuen gabungan DNA daerah *Internal Transcribed Spacer* (ITS)-1 dan 5.8S telah dilakukan. Sebanyak 29 sampel sekuen kultivar pisang termasuk 2 sekuen ITS dari *GenBank* dianalisis. Dua species dari *Ensete* digunakan sebagai *outgroup*. Total DNA diekstraksi menggunakan metode CTAB yang telah dimodifikasi. Primer ITS-5 dan ITS-4 digunakan untuk mengamplifikasi DNA daerah ITS. Data hasil sekuensing diedit menggunakan program CodonCode dan penjajaran sekuen menggunakan program ClustalX. Pohon konsensus dari data gabungan ITS-1 dan 5.8S menghasilkan lima kelompok kultivar pisang di Bali menggunakan metode *Maximum Parsimony* (MP). Kultivar Hias dan kultivar Rojo Molo terpisah dari lima kelompok kultivar pisang yang terbentuk. Hasil penelitian dapat digunakan sebagai informasi dasar proses hibridisasi untuk meningkatkan nilai ekonomi pisang di Bali.

**Kata kunci:** analisis filogenetik, Bali, hibridisasi, ITS-1, kultivar pisang

**MOLECULAR PHYLOGENETIC RELATIONSHIP OF BANANA CULTIVARS  
(*Musa spp.*) IN BALI BASED ON DNA SEQUENCES OF ITS 1 REGION**

**ABSTRACT**

Analysis molecular phylogenetic to evaluate relationships among banana cultivars (*Musa spp.*) in Bali based on DNA sequences of Internal Transcribed Spacer (ITS)-1 and 5.8S have been conducted. As many as 29 samples of banana cultivar sequence including two ITS sequences from GenBank were analyzed. Two Species of *Ensete* were served as outgroup. Total DNA was extracted by modified CTAB. ITS-5 and ITS-4 primers were used to amplify the ITS regions. Data sequences were edited by CodonCode and were aligned by ClustalX software. Consensus tree from combined ITS-1 and 5.8S sequences based on Maximum Parsimony (MP) resulted in five groups. Results also exhibited two cultivars namely Hias and Rojo Molo are separated from other five groups on the tree. The results can be used as a basic knowledge for hybridization to increase economic value of banana in Bali

**Keywords:** Bali, banana cultivar, hybridization, ITS-1, phylogenetic analysis