Identifikasi Kapang dari Manuskrip Kuno Berbahan Daluang Berdasarkan Analisis Sekuens Daerah ITS pada rDNA = Identification of Moulds from Old Manuscripts of Daluang Paper Based on ITS region of rDNA Sequence Analysis

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Abstrak

Penelitian ini bertujuan untuk mengidentifikasi 15 strain kapang dari lima manuskrip kuno berbahan kertas daluang asal perpustakaan Fakultas Ilmu Pengetahuan Budaya Universitas Indonesia (FIB UI) dan melakukan deskripsi morfologi kapang-kapang tersebut. Identifikasi dilakukan berdasarkan analisis sekuens daerah Internal Transcribed Spacers (ITS) rDNA dan pengamatan morfologi kapang dilakukan pada Czapek's Dox Agar (CDA). Primer forward ITS1 dan primer reverse ITS4 digunakan untuk amplifikasi daerah ITS rDNA.

Hasil elektroforesis produk PCR menunjukkan panjang daerah ITS dari 15 strain kapang tersebut bervariasi antara 500 pb--900 pb. Sebelas strain kapang memiliki homologi ITS rDNA dengan spesies terdekat Aspergillus clavatus Desm. (1 strain), Aspergillus flavus group (1 strain), Aspergillus niger van Tieghem (1 strain), Penicillium citrinum Thom (6 strain), Penicillium janthinellum Biourge (1 strain), dan Penicillium oxalicum Currie & Thom (1 strain) dan termasuk anggota ordo Eurotiales, kelas Plectomycetes, dari filum Ascomycota. Satu strain memiliki homologi ITS rDNA dengan spesies terdekat Pseudocercospora sp. (1 strain) dan termasuk anggota ordo Capnodiales, kelas Dotthideomycetes, dari filum Ascomycota. Tiga strain kapang (Penicillium sp. FIB.PRI.6.1, Fraseriella sp. FIB.PRI.6.2, dan mycelia sterilia FIB.PRII.3) belum berhasil diidentifikasi hingga tingkat spesies.

.....The aims of this research were to identify 15 mould strains from five old manuscripts of daluang paper from the library of Fakultas Ilmu Pengetahuan Budaya Universitas Indonesia (FIB UI) and to describe their morphology. Identification was carried out based on analysis of Internal Transcribed Spacers (ITS) region of rDNA sequence. Observation of the mould's morphology was carried out on Czapek's Dox Agar (CDA). Forward primer ITS1 and reverse primer ITS4 were used to amplify the ITS region of rDNA. Gel electrophoresis results showed that the lengths of ITS region from 15 mould strains were on the range of 500 bp--900 bp.

Eleven strains showed ITS rDNA sequence similarities to Aspergillus clavatus Desm. (1 strain), Aspergillus flavus group (1 strain), Aspergillus niger van Tieghem (1 strain), Penicillium citrinum Thom (6 strains), Penicillium janthinellum Biourge (1 strain), Penicillium oxalicum Currie & Thom (1 strain). The strains belong to order Eurotiales, Class Plectomycetes, phylum Ascomycota. One strain showed ITS rDNA sequence similarity to Pseudocercospora sp. (1 strain). The strain belongs to order Capnodiales, class Dotthideomycetes, phylum Ascomycota. Three strains (Penicillium sp. FIB.PRI.6.1, Fraseriella sp. FIB.PRI.6.2, and mycelia sterilia FIB.PRII.3) were unable to be identified to species level.