

## Preservation and Conservation of Palm Leaf Manuscripts at the University of Jaffna Library: Fungal Deterioration, Treatment Strategies, and Digitization

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### Abstract

Library university of Jaffna palm leaves manuscripts despite challenges such as limited resources, inadequate infrastructure, and periods of civil unrest. The palm leaf manuscript collection preserved in the Archives of the library, University of Jaffna represents a unique and significant repository of Sri Lankan Tamil intellectual heritage. This study examines the preservation and conservation practices applied to palm leaf manuscripts at the University of Jaffna Library, with a particular focus on fungal deterioration, control and treatment strategies, traditional preservation practices, and digitization as a long-term preservation approach. This study adopted case study method by using visual inspection, environmental assessment, laboratory based fungal identification, conservation treatment documentation and digitization. This study find that the, widespread fungal infestation, primarily associated with high humidity and inadequate ventilation. Laboratory analysis identified *Aspergillus* and *Penicillium* species as the dominant fungal agents responsible for biodeterioration. Conservation treatment using a controlled mixture of lemongrass (citronella) oil and ethanol proved effective in reducing fungal growth, improving leaf flexibility, and enhancing textual readability. Traditional preservation methods, when scientifically assessed and carefully applied, were found to complement modern conservation practices effectively. Digitization further contributed to preservation by reducing physical handling while improving access and scholarly use. This study concluded that an integrated conservation and preservation framework integrating with the environmental control, validated traditional treatments, routine biological monitoring, and digitization are essential for the sustainable preservation of palm leaf manuscripts in tropical academic libraries. As custodians of documentary heritage, librarians play a critical role in ensuring the long-term conservation and transmission of this irreplaceable cultural knowledge to future generations.

**Keywords:** *Palm Leaf Manuscripts, Conservation, Fungal Deterioration, Traditional Preservation, Digitization, University of Jaffna Library*