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# USE OF COIR FIBRE AS A RAW MATERIAL FOR GEOTEXTILES



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This thesis was submitted to the Department of Textile and Clothing Technology of the University of Moratuwa in partial fulfilment of the requirements for the Degree of Master of Science

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January 2003

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The work presented in the thesis in part or whole, has not been submitted for any other academic qualification at any institution.

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## ABSTRACT

Geotextiles are defined as 'permeable textile material used with foundation, soil, rock, earth or any other geotechnical engineering related material, as an integral part of a man-made project, structure or system' where Geotextiles are used in the separation, reinforcement, drainage and filtration. Geotextiles are of two main types, namely natural and synthetic. The more popular ones are made from polyester, polyamide, polyethylene and polypropylene. The synthetics are preferred because of their high strength, extensibility and resistance to microorganisms when used in various applications usually in contact with soil particles.

There is a rapid growth in the use of bioengineered soil erosion and sedimentation control designs especially in environmentally sensitive areas. Most of these designs incorporate coir products to provide the required initial structural stability until the establishment of sustainable vegetation. Design criteria in these designs assume a certain rate of degradation in the coir products. As a result, there is a growing concern about durability and strength retention in field applications of coir erosion control products. Coir, jute and coir-jute blends are natural geotextiles commonly used in geotechnical engineering applications. Natural geotextiles are totally biodegradable and provides excellent microclimate for plant establishment & growth, easy to install and economical.

## ACKNOWLEDGEMENT

- (1). I gratefully acknowledge the time and effort of Dr.Nirmali de Silva in supervising this research project. I appreciate the constant guidance and continued support give to me.
- (2). I would like to thank Prof. Lakdas D. Fernando, Senior Professor and former Head of the Department of Textile and Clothing Technology and Dr. U.S.W. Gunasekera, Senior Lecturer in the Department for their valuable contribution and for their vital suggestions to improve this project.
- (3). I wish to thank Mr. Saman Indrajith the General Manager of the Sancta Maria Coir Export for generously supplying coir geotextile samples to carry out the research work.
- (4). I wish to extend my sincere thanks to the staff members of the Department of Textile and Clothing technology who helped me in various ways to complete the project successfully and especially to the technical officers Mrs. D. Dissanayake, Mrs. P. Wanniarachchi, Mr. C.P. Malalanayake and lab attendant Mr. W.Chandradasa for their co-operation extended to me during my work.
- (5). Further, I wish to sincerely thank and acknowledge the support given by Lecturer in-charge Mr. V.S.C. Weragoda and technical officer Mr. S.D. Karunarathne of the Material Tensing Laboratory of the Department of Material Engineering of the University of Moratuwa.
- (6). I would like to thank my friend Kumudini for the many useful discussions we had while we were studying together.
- (7). The contributions from the Senate Research Grant to purchase chemicals and accessories for the research is appreciated.
- (8). Finally I wish to gratefully acknowledge the Asian Development Bank, Science and Technology Personnel Development Project for the financial assistance that enabled me to undertake a research project leading to Masters Degree.



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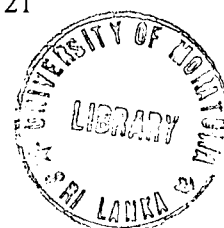
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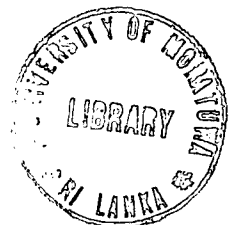
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## List of Abbreviations

fig.	-	figure
f	-	frequency
hrs	-	hours
R.H.	-	relative humidity
tpm	-	turns per meter
Vs	-	versus



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