TECH NEWS LETTER

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MSME Technology Facilitation Centre
(A Joint Initiative of Government of West Bengal and Council of Scientific and Industrial Research)

TECHNOLOGIES for CLEAN BIOPROCESS FOR QUALITY COIR FIBRE PRODUCTION

Keywords: (Clean Bioprocess, MSME TFC, NIIST, enzymatic cleaving)

Introduction:

Traditional extraction method of plant fibres, especially the coir fibre and jute is being continued even today in spite of its serious adverse impact on environment and quality of products. After many decades of research for a clean bioprocess, CSIR- National Institute for Interdisciplinary Science and Technology (NIIST), Thiruvananthapuram, Kerala has developed an environment and labour friendly process for the extraction of plant fibres, which enables faster production of better quality fibres. The technology demonstration of coir fibre extraction was done at 0.5 ton level with concomitant generation of 500 M3 of methane rich biogas per ton of fibre. Commercialization of this new technology can eliminate the water pollution and methane emission from the traditional extraction.

Brief Profile:

A clean bioprocess has been developed by CSIR- National Institute for Interdisciplinary Science and Technology (NIIST) for the extraction of quality coir fibre from coconut husk. This method carries out separation of fibres from their matrices by enzymatic cleaving of cementing compounds with in situ microbial growth and enzyme production. This bioprocess not only converts all the organic pollutants emanated from the extraction process to methane, but also facilitates its recovery as an Energy Source. Since the methane production is almost exclusively from the Up flow Anaerobic Sludge Blanket Method (UASB) methanogenic reactor and no significant quantity of methane is generated from the retting tanks, therefore the collection of methane is possible without expensive gas tight covering of the retting tanks. This bioprocess can also be used for processing of natural fibres like jute, banana and pineapple leaf.

Machine for Fibre Extraction

Technology Provider:

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