MODERNISATION AND EXTRACTION OF COIR

YEAR	ACTIVITIES	ACHIEVEMENTS
2001-02	COIRRET formulation developed for treatment on coconut husks and coir fibre was modified to a liquid form for easy application. The malodour attributed to the animal extract in the medium was replaced by soya extract of vegetable origin. The cost was reduced by Rs. 10 per kg. The period of composting of coir pith was reduced using PITHPLUS in combination with paddy straw and soya base under the UNDP Project. Experiments carried out to develop a biological process of effluent treatment under UNDP Project 	1.Developed a liquid formulation of COIRRET for easy application and to remove malodour. 2. By the use of perforated PVC pipes in the composting of coir pith heap, the period of composting was reduced to 20 days instead of 30 days.
2002-03	Laboratory scale experiments on biopulping of coir waste fibre were conducted. A novel technique for the "in situ" composting of coir pith hillocks was developed using perforated PVC pipes for aeration and field demonstrations were conducted in Vayalar and Thanneermukkom in Kerala by which the period of composting was reduced to 21 days from 30 days. For development of Cocolawn™ , the scientists of CCRI viz. Shri. Christy Fernandez, Dr. U.S. Sarma and Shri. K. Somanathan Nair were confired the Technology Day award for 2002 by National Research Development Corparation (NRDC), New Delhi and the technology was transferred to M/s. Cadila Pharmaceuticals, Ahmedabad through NRDC for a license fee of Rs.1,00,000/-.	1.National Award for COCOLAWN™ on Tech-nology Day on 11 May 2002. 2. The COCOLAWN™ technology was transferred to M/s. Cadila Pharmaceuticals, Ahmedabad.

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2003-04	Experiments on composting of coir pith using Soya nitrogen at different concentration viz 0.1%, 0.5%,1%,2.5% and 5%were conducted and samples of coir pith collected periodically were analysed for nutrient status. Bio-bleaching and Bio-softening of coir fibre was conducted with the treatment of phenolytic strain of bacteria viz. Mycoplana bullata and lignolytic strain viz. Phenerochaete chrysosporium and Coriolus versicolor. The treated samples were tested for fastness to light and degree of softness. Training on application of COIRRET/PITHPLUS was imparted to the coir entrepreneurs from Thiruvananthapuram, Kollam and Vycome areas. Collaborative project with Indian Association for the Cultivation of Science, Kolkata on the bio softening and bio bleaching of brown coir fibre obtained from dry husk. Collaborative project with Bharatidasan University on the use of cyanobacteria for the composting of coir pith.	1.Composting of coir pith using soya nitrogen as a substitute to urea was successfully carried out in the laboratory.
2004-05	Experimental studies on the treatment of phenolic strain of bacteria Mycoplana bullata and lignolytic strains Phanerochaete chrysosporium and Trametes versicolor were treated on coir fibre for biobleaching and biosoftening. The treated samples were assessed for light fastness rating on Xenotest and for degree of softness on the flexural rigidity test equipment. Laboratory level trials on effluent treatment system were carried out in the laboratory using glass column saturated with sodium alginate beads and the bacterial strain Pseudomonas dimorpha. Studies on lignin degradation by microbial cultures were continued. Totally 90Kg coir fibre were treated with COIRRET in different formulations (semi solid, liquid & dry form)@ 30Kg. each for exhibiting at the golden jubilee celebrations. Demonstrations on the applications of COIRRET/PITHPLUS were carried out Kattukada Society in Kanjikuzhi block Panchayath. A bulk demonstration on coir pith composting of coir pith using pithplus and urea was carried out in CCRI in connection with the golden jubilee celebration. Studies on composting of coir pith using soya nitrogen were carried out in the laboratory to avoid urea and make the manure 100% organic.	1. Seven Project students were guided in completing their project.

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	Training on the applications of COIRRET & PITHPLUS and technology for effluent treatment of coir retting and Cocolawn was imparted to 24Nos. of trainees from the island of Lakshadeep. Training on the applications of COIRRET & PITHPLUS were imparted to 480Nos. of trainees from different coir co-operative societies from Malapuram, Thrissur, Kozhikode, Ernakulam, Palakkadu, Alappuzha, Kollam and Thiruvananthapuram in seminars organised by Institute of Co-operative management. As per the request from different coir entrepreneurs analysis of coir pith samples were carried out on routine basis in the laboratory and totally 85 nos. of coir pith samples were tested and reports issued. In order to assess the infrastructure facilities required for a C-POM manufacturer for giving registration under Coir Board, 4 composting units were inspected . Students from various Universities were guided in completing their project work as part of their course and details of the projects are given below: "Lignolytic enzymes of Phanerochaete chrysosporium NCIM 1197 and its effect on coir fibre" December 2004 submitted to the Mahatma Gandhi University. "Studies on the physico chemical characteristics of biodegraded coir pith using soya as nitrogen source" August submitted to Cochin University of Science & Technology. "A study on the physico-chemical parameters of coconut husk leachate" June 2004 submitted to the University of Kerala. "A study on the physico-chemical parameters of coir dye effluent.(Acid orange-rhodamine dye)" June 2004 submitted to the Univesity of Kerala. "A study on the physico-chemical parameters of coir pith leachate"June 2004 submitted to University of Kerala. "Biobleaching and biosoftening of coir fibre using phenol degrading strains of M.bullata and P.desmolyticum"May 2004 submitted to the Periyar University. Biobleaching and biosoftening of coir fibre using lignin degrading strains of Tramates versicolor and Phanerochaete chrysosporium May 2004, submitted to the Periyar University. Isolation and identification of cellulolytic bacteria from coconut husk retting ecosystem" May 2004 submitted to the Periyar University.	

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