

2023 November

Issue 8

COIR VOX

◀ A Bulletin from NCRMI on Kerala Coir ▶

Revolutionizing
Agriculture

The Vital Role of Coir-Based Products



Latest innovative
products by **NCRMI**

Coir Traffic
Island

Kerapeat
Special Feature

Workshop
Ernst and Young (EY)

PUBLISHED BY

NATIONAL COIR RESEARCH & MANAGEMENT INSTITUTE (NCRMI), THIRUVANANTHAPURAM

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LATEST INNOVATIVE PRODUCTS BY NCRMI

On January 3, 2024, Shri. P Rajeeve, the Hon'ble Minister for Industries, Law & Coir, and Chairman of NCRMI, will launch five innovative products developed by NCRMI viz - Coir Divider, Trichopith Pro, Coconurture, Coco Aura and Digital Coir Runnage Meter. These advancements in coir-based technology mark a significant moment in sustainable and digital initiatives by NCRMI.

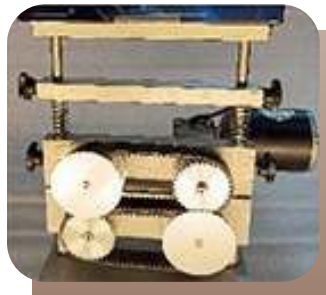
COIR DIVIDER: Road Divider Using Coir Cocologs

Coir divider is an innovatively crafted road divider developed using coir based materials different from conventional brick and cement. Sustainable coir divider significantly mitigates collision impact, minimize irrigation and reduce soil quantity



DIGITAL COIR RUNNAGE METER:

The Digital Coir Runnage Meter, a groundbreaking innovation from NCRMI, revolutionizes the coir industry by replacing traditional manual runnage measurements. This precise, user-friendly, and low-maintenance testing instrument delivers results in just 1 minute.



COCOAURA: Revolution in sustained and consistent fragrance experience



COCOAURA is a natural alternative to conventional chemical air fresheners. It possesses antimicrobial and antifungal characteristics, along with the capability for controlled release diffusion. Beyond the pleasing scents, these essential oils may even offer therapeutic benefits for both the body and mind.

TRICHOPITH PRO: Composting Reimagined



Trichopith Pro is engineered to elevate composting, focusing on crushed tender coconut and coir pith. This groundbreaking solution expedites the composting period and offers a dynamic tool to optimise organic compost management. The secret lies in the infusion of the novel *Trichoderma asperellum*—an innovation poised to revolutionise how we approach composting.

COCONURTURE: The Organic Potting Filler

COCONURTURE is a breakthrough in organic potting fillers formulated by NCRMI. Developed based on the success of rigorous field trials, COCONURTURE is a meticulously crafted blend of crushed tender coconut husks, coir pith compost, farmyard manure, Trichoderma, and soil in minimal proportions.



A 5-POINT APPROACH TO ENTER NEW MARKETS WITH COIR

Abhishek C

Director, NCRMI

Coir is a versatile natural fibre derived from coconut husks. It has gained popularity in various industries, including construction, agriculture, horticulture, and eco-friendly home decor. Compared to most eco-friendly materials, coir stands out with the most negligible ecological footprint across its value chain - from production processing to end-of-life disposal. Compared to other natural fibres and fabrics, water consumption is much less or nil in processing the material.

The global sustainability approach in everything we do opens new doors and opportunities for Indian Coir and Coir products. However, marketing coir effectively can be challenging. This article will explore a 5-point approach to market coir and coir products successfully.

1. Highlight its Environmental Benefits:

One of the key selling points of coir lies in its eco-friendly nature. One can attract the attention of environmentally conscious consumers by emphasising its sustainability and renewable sourcing. We can showcase coir as a natural alternative to synthetic materials, highlighting its biodegradability, low carbon footprint, and non-toxic properties. Promoting coir as a sustainable choice will undoubtedly resonate with those who prioritise minimising their environmental impact.

2. Demonstrate its Versatility:

Coir's versatility is another crucial aspect that can help create a market. Coir's applications are vast and diverse from mulching, erosion control, and hydroponic gardening to floor mats, carpets, and even furniture. Featuring these various uses in its marketing strategy will attract a wider audience, demonstrating that Coir offers a solution for multiple needs across different industries.

3. Showcase its Performance:

Demonstrate how coir performs as effectively, if not better, compared to alternative materials. For instance, in agricultural applications, coir's water retention capacity, weed suppression properties, and ability to enhance soil structure prove its worth over conventional materials like peat moss. By showcasing its superior performance in terms of efficiency and durability, one can convince sceptical consumers to switch to coir.

4. Leverage Influencers and Testimonials:

Influencers and testimonials play a significant role in shaping consumer behaviour. Partnering with influential individuals in the sustainability or gardening sphere who endorse and advocate for coir can increase its visibility and credibility. Additionally, collecting and sharing positive testimonials from satisfied customers who have experienced the benefits of coir can help build trust and encourage potential customers to try it for themselves.

5. Educate and Raise Awareness:

Market knowledge and awareness about coir may still be limited among consumers. Therefore, implementing an educational approach to marketing becomes crucial. Providing informational content through blog posts, video tutorials, and social media campaigns that highlight the benefits, uses, and correct application methods of coir is crucial. Educating the target audience will create a more informed market and position a brand as a reliable source of information and expertise in the coir industry.

Marketing coir successfully requires a thoughtful approach that combines highlighting its environmental benefits, showcasing its versatility and performance, leveraging influencers, and raising awareness through education. By implementing these five points, we can unlock the immense potential of coir and position coir brands as leaders in the growing market for sustainable materials. Remember, the essential lies in effectively communicating Coir's unique selling points and appealing to the values and needs of the target audience.



REVOLUTIONIZING AGRICULTURE:

The Vital Role of Coir-Based Products

Coir Pots : Coir pots are biodegradable alternatives to plastic nursery pots. Coir pots can be directly transplanted into the ground, reducing transplant shock and promoting healthier root growth.

Coir Mulch Mats : Coir mulch mats are used to suppress weeds, retain soil moisture, and regulate soil temperature. They are often placed around the base of plants to reduce weed competition and conserve moisture.

Coir Erosion Control Blankets : Coir erosion control blankets are made from coir fibers and provide erosion control on steep slopes and embankments.

Coir Weed Mats : Coir weed mats or weed barriers are used to suppress weeds in planting beds. They allow water to penetrate while blocking sunlight, preventing weed growth.

Coir Compost Bins: Coir-based compost bins are eco-friendly options for composting organic waste on farms. They provide good aeration and moisture retention, promoting efficient decomposition.

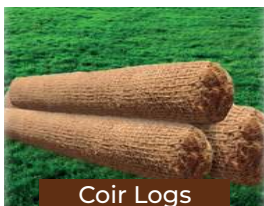
Coir Discs and Pellets: Coir discs and pellets are used for seed germination and transplanting.

Coir Fibre and Coir Dust: Coir fibres are used as soil amendments and in potting mixes. They improve soil structure, aeration, and water retention. Coir dust, also known as coco peat, is an excellent growing medium in horticulture and hydroponics.

Coir Geotextiles : Coir geotextiles are natural erosion control materials. They are used to stabilize soil on slopes, riverbanks, and coastal areas.

Coir Twine and Rope : Coir twine and rope offer a natural and versatile way to guide and stabilize growing vines of tomatoes, cucumbers, and grapes. They are strong, durable, and resistant to decay, making them ideal for outdoor use.

Coir Logs : Coir logs are cylindrical structures filled with coir fibre. They are used in riverbank and shoreline stabilization projects to control erosion and promote vegetation growth.



Coir Logs



Coir container



Coir jiffy bags

Coir-based products have emerged as eco-friendly alternatives to traditional materials in farming, offering numerous benefits such as improved soil health, enhanced crop productivity, and reduced environmental impact.



Coir pots



Coir Fibre



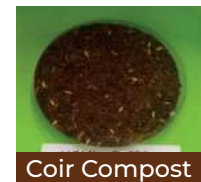
Coir Dust



Coir Geotextile



Coir Twine



Coir Compost



Field preparation using CPC Topdressing

Coir pith was once considered a waste product of the fibre extraction process. Because of the high C: N ratio (112: 1) and high lignin content, its degradation and mineralisation rates are very slow, preventing its direct use as an organic manure. In addition, polyphenols and phenolic acids can be phytotoxic and inhibit plant growth.

In recent years, research initiatives by NCRMI, CCRI, CWRDM, TNAU, KAU, among other R&D institutions, the scenario has changed. It is being used as organic manure, mulching amendment, and growing media for pots and has various applications in the horticultural sector. The coir pith's economic value is today almost equal to fibre.

SUSTAINABLE FARMING SOLUTIONS:

Trichoderma asperellum

NCRMI has isolated a fungus strain with potent biocontrol properties from raw coir pith. This newfound organism, identified as *Trichoderma asperellum*, has undergone rigorous characterisation, establishing itself as a novel biocontrol agent with promising applications in agriculture.

Characterisation of *Trichoderma asperellum* :

Trichoderma asperellum's distinctive morphology and growth patterns have been meticulously documented through comprehensive phenotypic analysis. Genotypic characterisations have further confirmed the uniqueness of this strain, laying the groundwork for understanding its potential applications in sustainable agriculture.

Application as a Biocontrol Agent:

Trichoderma asperellum emerges as an environmentally friendly alternative to chemical pesticides, showcasing remarkable capabilities in suppressing plant pathogens. Its introduction into agricultural practices promises to enhance crop yields while minimising the ecological footprint associated with traditional pest control methods.

Trichoderma asperellum is a formidable plant protection agent, showcasing immense potential in sustainable agriculture. As a biocontrol marvel, it effectively suppresses plant pathogens, offering a natural and eco-friendly alternative to chemical pesticides. This fungus establishes a protective shield around plants, enhancing their disease resistance and contributing to overall crop health. Its unique ability to form symbiotic relationships with plant roots further amplifies its efficacy. *Trichoderma asperellum* also demonstrates remarkable capabilities in the degradation of lignocellulosic biomass, positioning itself as a potent agent for enhancing bioconversion processes.



COIR TRAFFIC ISLAND

Traffic islands are small raised area in the middle of a road for channelizing traffic and reducing collisions. These islands provide suitable means for avoiding head on collision between the vehicles especially in regions of higher traffic density. Conventional dividers are typically constructed using concrete and soil is filled within them. Vegetations are also established within the filled soil. Such construction activities are often associated with higher monetary investments especially with the material cost associated with it. Furthermore, the maintenance of the construction would only escalate the total monetary input.

A new and sustainable means of traffic island using coir products were developed. The incorporation of coir products reduce the material cost as well as labour and time required for setting of island. The coir based material fosters the growth and development of vegetation much more than using soil alone and is especially suited to regions where the availability of soil is limited. Flowering plants, lawn grasses etc. can easily be grown within the coir island with greater ease. Coir traffic island could effectively be translocated as per the need, making it much more flexible in comparison with the concrete based island. Due to the flexible nature of ecofriendly coir, the impact of head on collision with the island is lesser in comparison with normal hard structure traffic islands.



ADVANTAGES OF USING COIR TRAFFIC ISLANDS

1. Constructed using sustainable, ecofriendly and natural materials
2. Easier to construct with less labour, cost and effort
3. Suited for region with soil scarcity
4. Accelerate the growth and development of vegetations
5. Improves the aesthetics
6. Reduce the quantity of irrigation



SEASHORE PROTECTION USING LATEX BACKED COIR PANAMA BAGS

45 percent of India's coastline is facing erosion. The erosion in the western coastline is more severe when compared to the east, owing to the geographic factors, the south west monsoon and associated strong wave action. This is due to the close proximity of the continental shelf to the shoreline. The coastline of the Kerala is approximately 590 km long and spread over nine coastal districts. During the monsoon season in Kerala, the coastal area is subjected to severe erosion. Coastal erosion and accretion are natural processes. However, they have become anomalous and widespread in the coastal zone of Kerala owing to combinations of various natural forces. Severe erosion is brought on by large and steep waves that occur during monsoon storms.

Options for combating coastal erosion are hard structure constructed on beach viz. seawalls, breakwaters, groynes etc. These hard structures are expensive and spoil the aesthetic aspect of the beaches or coastlines they seek to protect, hence decreasing their economic value. Moreover the availability of rock material is also scarce. However, the effectiveness of hard structure to deal with the adverse impact of climate change is limited when compared with natural protection such as mangroves. The cost of installing hard structure for coastal protection is very high and often aggravates the problem. This has led to increase interest in soft structures for costal protection

The application of coir could bridge the gap between the necessity of having a soft structure for coastal erosion as well as utility of a sustainable and an effective method in conservation. Apart from the regular uses, geosystems made with geotextiles like geotextile bags are playing a proactive role in hydraulic coastal, offshore engineering as eco-friendly, construction friendly and cheaper alternatives of the traditional protection and engineering solutions, which generally are hard, short lived, expensive and environmental degrading. With a holistic and scientific approach, further hardening of the coast with sea walls can be prevented. This will help Kerala's coast to find its own natural resilience to climate change and eroding seas. The application of coir geocell system could be effectively used as a material for establishing vegetation. The bioengineering method utilizing the coir material media accelerate the rate of establishment as the required potting mixture suiting to the respective vegetation can be placed within the coir based system. Considering the exigency of intervention, a demonstration project was conducted by NCRMI in Mararikulam panchayath of Alappuzha district. Sand available locally in the regions was filled in the latex backed coir panama bags, which were stacked in layers along the seashore. Mangrove saplings were planted in coir geocell system behind the panama bags





COIR GARDEN ARTICLES

Looking towards the history, the use of Coir in agriculture sector is marked since its origin in 13th Century. The historians have mentioned in their travelogue the uses of coir as ropes and cordage in industrial and agricultural practices.

In agricultural sector coir yarns are used mainly for trailing climbers and coir ropes for growing hops for the brewing industry, as the vines establish better on a natural fibres like Coir. Other than Coir ropes and cordages, coir materials that are used in agriculture purposes for various applications are - Coir Geotextiles, Non-woven needle punch materials, Mulching materials, Coir Geo cells etc.

Apart from these, Coir based garden articles like coir nursery pots, germination trays, grow bags, are popular in international markets and are now becoming popular in domestic markets for garden and balcony arrangements and for decorating living rooms to give a green living room feel. The popular garden articles in the market are –

1. Plant climbers or coco poles

They are coir fiber layers/ sheets wound over a pole of treated rubber wood with one end of the pole sharply pointed to be dug in the soil. The coir sheets are made using rubber latex as adhesive. The pointed pole is atleast 20 cm long to act as a strong base for supporting the plant climbers to flourish over the coir layer on the pole. These types of poles are generally used as support for internal plants like creepers.

The different varieties of coco poles can be classified in accordance to the sheet of coir fixed on to the pole. The most commonly used techniques are – coir fibre sheet laminated on hessian cloth, fiber layer tied using coir yarn, fiber layer stitched type.



2. Coir Baskets

These are the most common form of garden article available in the market. These are moulded rubberised coir fibre baskets made from sheets of coir fibre. They can be moulded into desired shapes generally in hemispherical shape or u shape. They are generally used in roof gardens. The wall thickness varies from 10 mm to 15 mm and can be made in accordance to desired sizes.

3. Coco Pots

These are moulded coir pots that are usually used as nursery bag for seedlings. These can be directly planted without removing the nursery bag. The nursery bag of this layer shall gradually degrade into the sand. Coir fibre and natural latex are used and are hence 100 % natural, biodegradable and eco-friendly product. The wall thickness varies from 2mm to 6mm.



COIR BOARD



Coir Board is a Statutory Body established by the Government of India under legislation enacted by the Parliament, for the overall sustainable development of the Coir Industry in India. The functions of the Board as laid down under the Act include undertaking, assisting and encouraging scientific, technological and economic research, modernisation, quality improvement, human resource development, market promotion and welfare of all those who are engaged in this industry. The Board implements schemes for developing the coir sector, improving skills and knowledge, and increasing sales and exports in the sector.



The Board is constituted by the Central Government with the representatives of various stakeholders of the industry, two Members of Parliament from Lok Sabha, one Member of Parliament from Rajya Sabha and representatives nominated by the Central and State Governments. The Chairman, Coir Board appointed by the Central Government as per provisions of the Coir Industry Act is the Chairman of all the Committees. Shri D.Kuppuramu is the present Chairman of Coir Board. The Head Quarters of the Board is located at Coir House, M.G. Road, Kochi, Kerala. The Board is running 47 establishments including 28 Showrooms in various parts of the country.

ERNST AND YOUNG (EY) WORKSHOP

Facilitated a 6-day workshop for Ernst & Young employees, where they collaboratively produced 2,000 bags and 100 frame mats.



PERUNGUZHI COIR CO-OPERATIVE SOCIETY

The Perunguzhi society, operating in Aloor grama panchayat, Thiruvananthapuram, is one of the first 22 co-operatives started as part of the coir co-operative movement in the 1950s. Perunguzhi region, which is close to the sea and inland waters, is blessed with many good-quality coconut trees. The Angengo ropes spun from the golden coir fibres is the main product of the society. The society processes around 1,50,000 lakh coconut husks every month to create 15,000 kg of coir products. The society has 35 traditional ratts, 12 electrical ratts, 20 automatic spinning machines. The society members include 1,380 women and 200 men. The current president is Mr. R. Ajitkumar and secretary is Mr. V. Anilkumar.

In addition to the production of coir products the society undertaken socio-cultural activities for its members such as running two fair price shops (ration shops), ensuring minimum wages and bonuses, providing uniform for machine operators, providing accident insurance, support for weddings. The society has been providing Onam kits to the workers without break for the past 15 years. The co-operative also takes members on exposure visits to nearby states. The society has won multiple accolades for its activities and achievements.



The society has won multiple accolades for its activities and achievements.

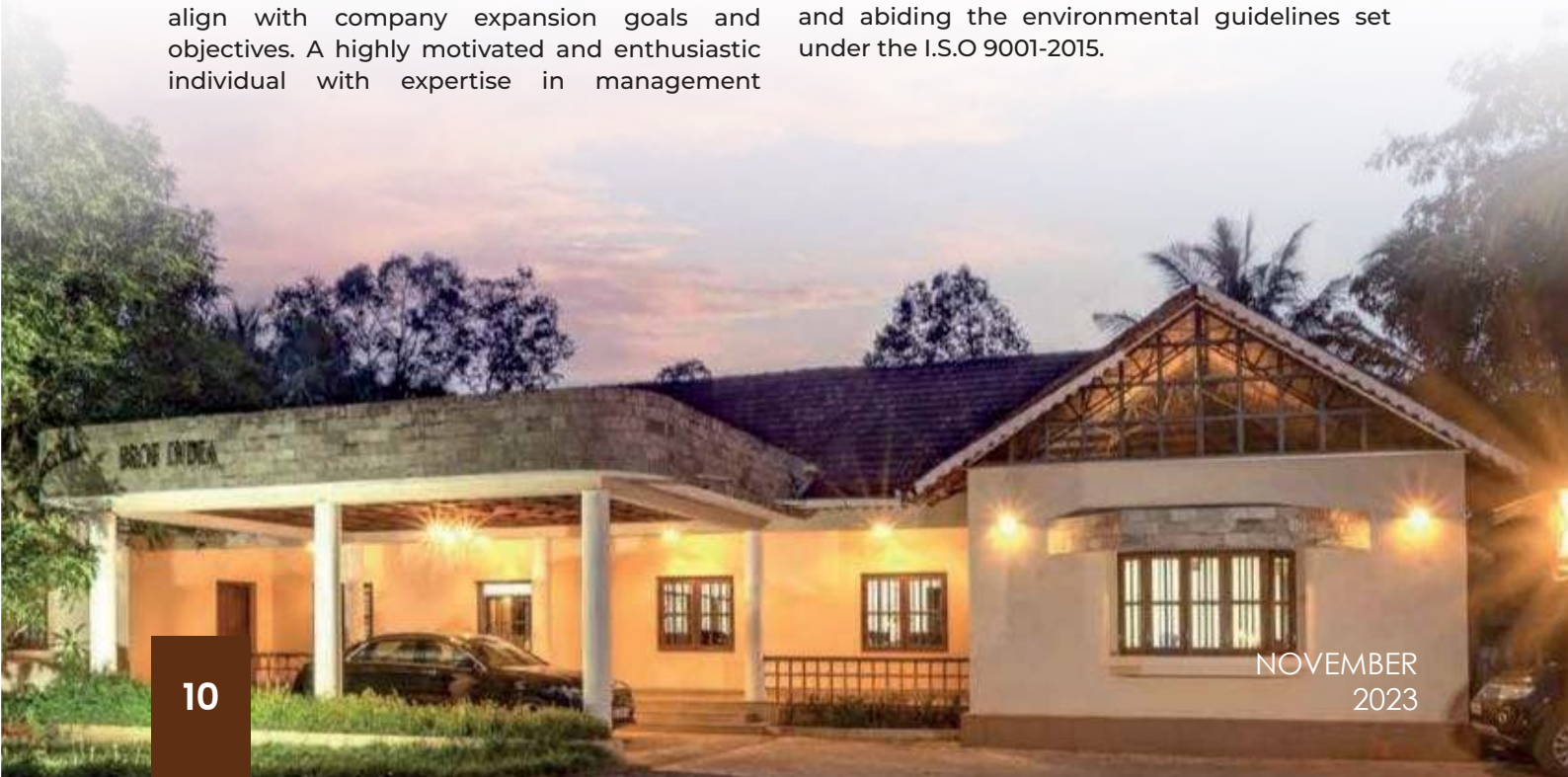
BRO'S INDIA GROUP

A family venture, established in 1932 by Mr. K.J. Paul, the Group is professionally managed and has well-equipped manufacturing units in India. Bros India Group is managed by the second generation. Mr. K P. John (B.com, F.C.A), son of the founder Mr. K. J. Paul leads the group that takes great pride in its perpetual exporting business and valuable clients.

Late Mr. John Paul (Former Managing Director [2005-2020], who had fifteen years of experience in crafting customized operational plans to align with company expansion goals and objectives. A highly motivated and enthusiastic individual with expertise in management

and an exemplary knowledge of international markets which led to the growth of the company.

Bros India Group's high-quality standards and promptness in shipments along with our emphasis on speed, reliability and cost effectiveness is well appreciated by our clients. The Group companies include – Bros India Group, Brothers Coir Mills Pvt Ltd, Agro Brothers Coir Company, Big Peat Company and Paul Brothers & Co. Each incorporates high production standards and abiding the environmental guidelines set under the I.S.O 9001-2015.



KERAPEAT

Kerala Organic Manures is converting the coir pith to organic manure called C-pom using a technology from Coir board. Here the highly lignocellulosic coir pith is bio-degraded to organic manure by using microbiomes by adopting several new technologies from various research institutes. Various combinations of organic manures are produced by adding other organic materials like Neem cake, Bone meal, certain bio-control agents like Pseudomonas, Trichoderma, and essential micro nutrients. Kerapeat product range includes Kerapeat C-pom, Kerapeat Compost, Kerapeat Supermeal, Kerapeat Growbags, Kerapeat Potting Mixture, Kerapeat Chakirippotha, Kerapeat Neem cake, Kerapeat Bone meal, and Kerapeat filled growbags.



PARTICIPATION OF NCRM I IN KERALA EYAM EXHIBITION





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National Coir Research
& Management Institute



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