

“C-POM, THE BEST SUBSTITUTE FOR MINED PEAT OR ROCK WOOL” - Says an Expert

Coir Pith is generated in large quantities in the major coir production centres. Extraction of 1 Kg. of coir fibre on an average will leave 2 Kgs. of Coir Pith. Large hillocks of Coir Pith are a common sight in the villages where coir fibre is extracted. Coir Pith was considered as an agro waste in the yester years. In Kerala, the Coir Pith was used largely for reclaiming the wet lands and also as a mulch. But in the States like Tamil Nadu where fibre is extracted using mechanical means, large quantity of Pith is generated at a single unit. On an average, a single unit will generate about two tonnes of Coir Pith per day. In places where there is large concentration of coir fibre extraction units, it will be rather difficult for the unit owners to dispose coir pith. To establish a coir fibre unit 50 cents of land would be sufficient whereas to dispose the Pith generated by the unit, acres of land would be required. In places like Pollachi in Tamil Nadu, the unit owners dump coir pith on the sides of State Highway clandestinely. The civic authorities have put up notice boards on the roadsides warning the mill owners against dumping coir pith on the road side.

Coir Pith will not degrade by itself and will remain over the soil years together, thus polluting the environment.

The production of brown fibre in India has made a giant leap during the last three decades. The total production of brown fibre during the year 1976-77 was around 45,000 MTs which touched an all time record of 2,75,000 MTs during the year 2001-02. Consequently, the generation of Coir pith also had gone up tremendously. Coir Pith, which was considered a menace by the mill owners has now become a money spinner. Sri Lanka, which is the main competitor to India in the matter of coir production has been exporting large quantities of Coir Pith for many years. Sri Lanka has an established global market for coir pith.

The Nursery and Green House industries use significant quantities of sphagnum peat in the formulation of artificial substrates for production of bedding plants. Environmental concern and increasing cost of mined peat have resulted in plant lovers endeavouring for the development of an alternative to peat. Among various substitutes tried and scientific investigation and research undertaken in the matter coir based substrates were found to be a suitable alternative to peat for the formulation of substrates for production of bedding plants. There is at present a consistently growing demand for coir dust/pith as a soilless growth medium.

Coir Board has been pursuing Research & Development activities to find new user areas for Coir pith. The Board entered into a collaborative research project with Tamil Nadu Agricultural University way back in 1989 and as a result a new technology was developed for composting coir pith and to convert it into organic manure. Thereafter, the Board has been popularising the production of C-POM (Coir Pith Organic Manure) by organising field demonstrations in different locations. Coir Board also established a Pilot Scale Laboratory at its Research Centre – Central Coir Research Institute (CCRI) for the production of Pithplus, a fungal culture for converting coir pith into an organic manure. The Board has introduced a scheme of registration of the manufacturers of C-POM after inspection of the units and testing their products. Now there are about 20 such manufacturers registered with the Board.

M/s. Little Way Agri-Horti Society, Kalavoor in Alleppey, is one of the registered C-POM manufacturers. Shri. P.C. Varghese, Technical Director of the Society is an expert in the field with Post Graduate level academic qualification and years of rich experience in the fields of Agricultural Research, Extension and Marketing. He had served six years with the Kerala Agricultural University as a Scientist. He had also worked with a multi national company as an Agricultural Scientist in the marketing field and since 1994 has been actively involved in the promotion of C-POM. The following is the excerpts of the interview Shri. M. Kumaraswamy Pillai, Dy. Director (BFD) had with Shri.P.C. Varghese.

Q 1. Can you briefly explain about the present activities of the Littleway Agri-horti Society?

A. The Little way Nursery is in the field of Agro - business for over a past 25 years. During 1994, the Little Way Agri-horti Society was registered by the Partners so as to commence the commercial production of C-POM. As of now, the Society is active in the following areas:

- i) Commercial production and marketing of C- POM (Coir Pith Organic Manure).
- ii) Production of fungal spawn (Peat plus) for own use and marketing among C- POM processing farmers within Kerala.
- iii) Production of all planting materials in bulk and distribution among farmers, bulk supply to Govt. Agri Department and Krishi Bhavans.
- iv) Cultivation of Vegetables for seed production and marketing vegetable seeds.
- v) Bulk Production of rooted pepper cuttings using C-POM media.
- vi) Secondary hardening of Tissue Culture, eg - agar plants in the green house especially bananas, anthuriums, gerberas etc.
- vii) Conducting training for Agriculture officers, Farmers, Entrepreneurs with agri based projects and others in High Tech Agro-Nursery practitioners in organic manure production (C-POM and Vermi Compost) Flori culture (Orchids, Anthurium and Kuttimulla)
- viii) Participating in Agriculture Exhibition projecting the benefits of C-POM and its production both on commercial scale or for own use at individual farm level
- ix) Demonstrating the use of C-POM in Agri-Nursery business segment for preparing pot mixture, baby plants in poly bags, tissue culture plantlets hardening, seedlings in trays, layering, rooted cuttings mass production and such other hi-tech plant propagation practices

Q 2. How long you have been in the field? Also tell me how you happened to be associated with the manufacture of Coir Pith Organic Manure (C-POM) ?

A. We commenced production of C-POM during 1994 in small scale for our own use in the Nursery. Our experience with C-POM as a media in the pot mixture for all types of garden plants was very encouraging and it was really a turning point in standardising and boosting mass production of nursery plants especially rooted pepper cuttings in lakhs.

During the year 1995 we started commercial production of C-POM and the product was positioned in the market with our trade name COCO-Peat Compost. The cardamom planters in Idukki district and pepper growers provided support initially seeing the benefits of coco peat compost as a planting media and an excellent organic manure.

Q 3. How do you rate C-POM with the other bio-fertilizers available in the market ?

The traditional organic manure like cowdung and compost in comparison with C-POM contains more NPK (almost double) in addition to many micro nutrients & trace elements.

The plant nutrient status in C-POM remains uniform but that in cowdung depends on the feed materials of cattle and in the case of ordinary compost it largely depends on the source and type of bio-mass being composted. Cowdung and Town compost carry weed seeds to farm lands but C-POM contain no weed seeds. No other organic manures except C-POM, give stable plant nutrient analysis of natural origin. Almost all of the processed manure named and sold as organic manures in the market are mixture of many of the traditional organic manures fortified with synthetic fertilizers.

Q 4. In your opinion what are the major advantages of C-POM ?

- A 1. C-POM provides the ability to soil with gradual and controlled release of major plant nutrients. It inhibits immobilisation of P & K with remarkable nutrient efficiency leading to higher crop yield.
2. The addition of C-POM improves the physico-chemical properties of Soil through humification followed by mineralisation imparting several other benefits like removal of unfavourable crop growth conditions prevailing in very sandy soils on one extreme and very heavy soils on the other.
3. C-POM is an environment friendly organic manure suitable for all soils and crops. It is processed from homogeneous natural bio-mass adopting exclusive organic methods utilizing bio-agents for decomposition of coir pith. Its nutrient status is at par or above to that of cowdung, town compost or vermi Compost. With its immeasurable benefits as an inexpensive organic manure C-POM is cost effective compared to all the above manures, oil cakes and animal meals. It is an excellent organic medium and basal manure for application in planting pits for crops and forest trees especially in areas of water scarcity and drought.
4. C-POM is the best substitute for mined peat or rock wool and gains fast popularity in bio-tech labs for plant hardening.
5. C-POM creates most favourable soil condition at rhizosphere and brings about soil biology improvement helping the bio reactors in soil.
6. C-POM is an excellent soil ameliorant and soil conditioner for correcting soil problems. Thus it opens a long awaited method of biological reclamation system applying decomposed bio -mass for bringing alkaline, saline, acidic and also ill drained soils back to remunerative farming.
7. Soil less lawns on geotextiles plus C-POM, Seedling production in vegetable crops, cut flower industry, landscaping and such commercial Agri-practices.
8. No weed seeds or plant pathogens in C-POM.

Q 5. Do you feel that by excessive use of C-POM there will be any side effect for growth of plants. For eg. reduction in the yield etc. ?

The question of excessive use of C-POM does not arise since crops can grow and produce well in C-POM when it is used as media. But when it is applied as an organic manure, only recommended rate per unit area need be applied .

Q 6. Do you recommend enrichment of C-POM by adding other chemical / organic nutrients or it should be used in the virgin form?

- A. C-POM should be made available in the virgin form. Addition of any other chemical or organic substance will hamper the homogenous nature bringing limitations in its acceptance for several hi-tech Agri. applications. The identity of C-POM should be kept intact retaining the strength subject to analysis and common standards.

Q. 7 What are the prospects of C-POM in the domestic market?

- A. C-POM could be positioned well as a cost effective organic manure and the best substitute for Cowdung, Town compost or Vermi Compost. Scarcity in the availability of cowdung limits the use of sufficient organic manure basal application. This difficulty could be solved by popularising C-POM maintaining soil health and higher crop yields.

Q 8 Are you happy with the promotion programmes undertaken by the Coir Board for popularisation of C-POM ? If not what are your suggestions for making it better ?

The promotion programmes especially advertisement in press and radio undertaken by the COIR BOARD a few years back, helped to create some awareness among the farmer community. But subsequently it was discontinued. I have a few more suggestions.

- i. C-POM small packs should be displayed and sold in all Showrooms of Coir Board, Coirfed, Kerala State Coir Corporation and all such outlets throughout the country along with coir goods. Even the town dwellers in flats are looking for such a hygienic product for potted plants. The awareness thus created would facilitate popularisation of C-POM in commercial cultivation of all crops in farmers, fields and plantations.
- ii. Ad. Campaign should be organised in all media including TV Channels. Coir Board should take the lead involving Government Departments, and all in Coir Industry. The export oriented Coir Industry and the brown fibre sector should support the activity which helps in removal of waste generated and control the pollution in the coir production centres.
- iii. The C-POM processing units should be supported with annual subsidy support for packing material, transport, production facilities and marketing.
- iv. The Commodity Boards, UPASI, KHDP, Agricultural Universities, ICAR, Forest departments, Forest Development Corporation and all such departments and organisations are to be co-ordinated and made responsible for the popularisation and promotion of C-POM.
- v. Seminars and work shops for promoting the C-POM should be organised at regional/state/national levels. Scientists to be encouraged for carrying out research studies to improve the process and upgrade the quality of the product. The farmers at field level to be encouraged to use C-POM on various crops so that C-POM gets accepted by all in a participatory technology development (PTD) style.
- vi. Coir Board may arrange collection and documentation of all published works on C-POM and coir pith and make available at the CCRI library. This important work of literature survey may be entrusted with Tamil Nadu Agricultural University, Coimbatore on a top priority as a time bound project. The compilation may be published by the COIR BOARD.

Q 9. The Kerala Agricultural University has already included C-POM in their package of practices. Do you think that by this the government will buy C-POM for their plantations? Which are the major crops that can be applied with C-POM?.

A The Kerala Agricultural University has included C-POM processing method in the Package of Practices recommendations (Crops) in the workshop conducted during August 2000. By this C-POM is approved as an organic manure for various crops in Kerala to be applied at the rate of cowdung/compost recommended for various crops. The existing recommendations rate of organic manure or various crops of Kerala is as follows :-

1. Rice	2MT/acre
2. Coconut	15Kg/tree
3. Banana (Nendran/Robusta)	10 Kg / plant
4. Pepper	10 Kg/standard
5. Arecanut	10 Kg/tree
6. Rubber	15 Kg/tree
7. Cardamom.	2 Kg/clump
8. Tapioca	1 Kg/set.
9. Cocoa	20 Kg / tree

10. Ginger	100 Kg/cent.
11. clove	15 Kg/ Tree
12. Nutmeg	10 Kg/Tree
13. Elephant yarn	2.5 Kg/Pit
14. Sesamum	20 Kg/cent
15. Pineapple	100 Kg/cent
16. Mango	10-50 Kg/tree
17. Sapota	10-50 Kg/tree
18. Cowpea	40 Kg / Cent
19. Amaranths	100 Kg/Cent
20. Vegetables (Bhindi, Bittergourd, Snake gourd, cucumber, Brinjal, Chillies)	80 kg / cent
21. Coffee	5-10 Kg/Plant

Vanilla the new crop in our state require high rate application of organic manure and C-POM is very useful according to planters' experience. Recommendation for Vanilla may be finalised with Spices Board and demonstration plots may be laid out in principal Vanilla area of the State jointly by Spices Board and Coir Board using C-POM. Recommendation for C-POM in package of practices could help for inclusion of C-POM in government schemes implemented by Agricultural Department through Panchayat Krishi Bhavans

Q 10. Now India is exporting large quantity of coir pith in virgin form to foreign countries for agri-horti cultural applications. Do you think that C-POM will be a better substitute than raw coir pith, if so, what are the difficulties in exporting C-POM to foreign countries?

A. Raw coir pith (Uncomposted) is exported for use in soilless cultivation especially in areas facing different growing constraints such as water shortages, poor soil, drainge and low fertility, soil salinity, pests and other ecological problems. In such areas substitution will not be possible since coir pith plays the role of soil. Also raw coir pith is used in cut-flower industry and green house cultivation of crops as an exclusive buffer media.

But areas where organic farming is popular and countries where synthetic fertilizers are banned (eg. DUBAI), C-POM could vigorously be promoted as an excellent organic manure and not as a substitute for raw coir pith. Thus both raw coir pith and composted coir pith could be exported as an exclusive cultivation medium and as an environment friendly organic manure.

Q 11. Do you envisage that there should be a restriction in the number of C-POM manufactures ? If so what are the reasons ?

A C-POM is yet to get popularised among the farmers as an excellent substitute for compost or cowdung. The processing technology of Coir Pith has to be familiarised to the farmers and encouraged to produce C-POM themselves wherever raw coir pith is available. For other areas the commercial processing units could market their C-POM as a branded product. Increasing the number of C-POM manufacturers would not help, instead more and more farmer consumers should ask for this low-cost organic manure. Techno-commercial approach is needed to position C-POM in the general agro-input market for which advertisement support is a must. Instead of restriction in the number of C-POM manufacturers quality assurance systems should be established so that the product from various manufacturers maintain uniform standards. Once the product C-POM attains a reasonable business size and popularity among farmers more and more manufacturing units would come up and function with viability and quality.