



Turning waste to wealth

Success story of 'Samruthy' Coir-pith Composting Unit -

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Mr. Sebastian Philip, Mr. Baby Mathew and Mr. Saju Joseph of Chooral, Kannur District, Kerala run a coconut coir fibre extraction unit that generates on an average 3-4 tonnes of coir-pith waste every month. Their extraction unit was commissioned about 16 years back and has been working round the year since then. Huge mounds of coir-pith had accumulated in their unit premises and it became a major disposal problem. They even had to excavate large pits to accommodate this ever growing mound of coir-pith waste.

The coir-pith mound was growing out of proportion and taking up much of their available land area near their factory. The group started enquiring for means to dispose this waste in an environmental-friendly manner. Then they learned about the composting technologies available to recycle this lignin-rich waste to compost. They became aware of the popular technology of composting coir-pith using urea and oyster mushroom fungus *Pleurotus sajor-caju*. They also came to know about the co-composting procedure of coir-pith developed at ICAR-CPCRI, to

produce organic manure, where the use of urea was not involved. This technology attracted them as the compost produced was entirely using organic inputs.

Mr. Sebastian and group then visited CPCRI, Kasaragod during December 2017 to learn more about this urea-free composting technology. They got first-hand information about the coir-pith composting procedure from Drs. Murali Gopal and Alka Gupta, who were part of the team led by Dr. George V. Thomas (former director of CPCRI) which developed this technology. They were given demonstration of the composting procedure in the CPCRI composting unit. The procedure required mixing of coir pith with good quality poultry manure along with lime (calcium oxide) and rock phosphate (available as Rajphos or Mussoorie-Phos in local fertilizer stores) in the ratio 900:100:5:5 and spreading evenly in an area of 4x2x1 m (l x b x h) dimensions after proper mixing with sufficient addition of water. The whole coir pith heap is kept sufficiently moist by sprinkling water regularly and covered with gunny bag. Turning is required once in 15 days till 45-60 days when the



Huge mound of coir-pith waste dumped alongside the coir-fibre extraction unit

coir pith will become dark brown to black colour indicating the completion of composting process. Addition of fermented cow dung slurry during the first and/or second turning of composting materials is beneficial for the process. The final product can then be shade dried and packed.

Convinced with this technology, they then approached Dr. P. Chowdappa, the then Director of the Institute and inked an Memorandum of Agreement (MoA) with ICAR-CPCRI during Feb. 2018, facilitated by Dr. K. Muralidharan, Head, Div. of Social Sciences and Nodal Officer, ITMU, and promptly initiated the composting process in their place at Chooral, Payyanur.

The group made the infrastructure ready and received step-by-step guidance by the technology-developers and by the end of June 2018, their first batch of coir-pith compost was ready and launched with brand name 'Samruthy' Coir-pith compost. Random samples of ready compost were collected by us for quality check and found satisfactory. Currently their capacity is to generate 25 tonnes of compost in one round taking three months time. They plan to expand their production capacity. They found the mixing process to be labour-intensive for which they are also collaborating with ICAR-CPCRI and private firm to develop a simple mechanical mixing equipment to help reduce the labour cost and time. This innovation, once developed, will significantly improve coir-pith composting technology and can soon become more popular.

The 'Samruthy' coir-pith compost produced by the group, using this process, is highly porous, dark coloured, odour-free product, with pH in the range of 6.1 to 6.4 and having up to 500% water holding capacity. Its C:N ratio is 21 to 22 and organic carbon content 28-30%. The total N, P and

K content ranges between 1.3 to 1.4, 0.9 to 1.2 and 1.3 to 1.6 %, respectively. It is also a good source of plant micronutrients such as Fe, Cu, Zn and Mn and microbiologically rich in free-living nitrogen-fixing and phosphate solubilizing bacteria.

The 'Samruthy' coir-pith compost produced by this group is being sold and used by horticultural units for vegetable and flower seedling production and also for plantation crops such as coconut, arecanut, rubber, banana and spices crop such as black pepper and cardamom. It can be applied to coconut, arecanut, cocoa, rubber and oil palm @ 20-25 kg/tree/year; about 2-4 tonnes/ha for vegetables and ornamental crops; and 2-2.5 tonnes for paddy. The addition of coir pith compost improves the physical properties and water holding capacity of soils. It increases the organic matter and carbon content of poor humid tropical soils. It also helps in better root formation and enhances crop growth and yield. Agri-horti nurseries can use it as an ideal medium for raising pot-tray seedlings.

Through the ICAR-CPCRI technology, the group was able to effectively create 'wealth' from the huge quantities of coir-pith 'waste' available with them. They produced more than 120 tonnes of good



Dr. Alka Gupta, Principal Scientist-Microbiology guiding Mr. Sebastian & group for coir-pith compost production (left); coir pith heaps getting composted (right)



quality urea-free coir-pith compost within a short span of two years. There is an encouraging demand for this compost from the growers with positive feedback. Their product filled a gap in organic input requirement of the plantation and horticulture sector farmers of the district and nearby areas. The 'Samruthy' unit has now become a model site for those interested in producing urea-free coir-pith compost using ICAR-CPCRI technology. This venture by Mr. Sebastian and his Group highlights the successful conversion of 'waste' to 'wealth' with technical support from scientists of ICAR-CPCRI, Kasaragod.

Persons interested in the technology can contact Director, ICAR- CPCRI at 04994-232894 (directorcpcr@gmail.com) and those interested in obtaining 'Samruthy Jaivavalam' can contact Mr. Sebastian K. Philip of Kalapurackal, Choral, Mathil P.O., Payyanur, Kannur-670307 at his mobile number - 7511112861.

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