

Integrated approach for marketing of minimally processed tender coconuts

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Handling of tender coconuts will be easy if a major part of the husk is removed. But, when partial removal of husk is done, the colour of the nut will be changed to brown thereby reducing the attractiveness of the nut.

Under normal storage condition, the product also loses its natural flavour more easily than the unhusked nuts.

Technologies for minimal processing of tender nut have been developed for retaining the flavour and to prevent discolouration.



Introduction

Price fluctuation in the coconut oil market is the most serious problem faced by coconut growers. The coconut-based economy can be stabilized only when its dependency on a single product viz., coconut oil, is minimized. A substantial number of technologies have been evolved through systematic research for the profitable utilization of products and byproducts of coconut palm. In India, however, the post harvest processing even now is chiefly confined to the production of edible and milling quality copra, coconut oil, coir and coir based products. To cope with the market fluctuations, there is an urgent need for formulating and implementing programmes to promote alternative uses of coconut and value addition through product diversification. Due to the promotional efforts by various agencies like Coconut Development Board, the acceptance of tender coconut as a natural source of nutritious food and beverage is increasing and there is a growing consumer demand for this product.

Marketing of tender coconut

There is tremendous potential for promoting the use of tender coconut water as a natural health drink, especially in the present context of wide spread campaigns against

artificially flavoured soft drinks. As the practice of harvesting at tender coconut stage has been found to increase the productivity of palms it is profitable to farmers also. Hence, marketing of tender coconut will create opportunities for enhancing on-farm income of farmers and employment at different levels. In spite of the obvious benefits, the potential of marketing opportunities of tender nut is yet to be explored. It is assessed that only less than ten per cent of total coconut production in the country is used for tender nut purpose. The consumption level of tender coconut in Kerala state is still lower. In a study jointly conducted by IASRI, New Delhi and CPCRI, Kasaragod during 2001, it was found that the sale of tender coconuts by farmers is only 3-5 per cent of the total coconut production in Kerala. Though the supply chain of tender coconut is simple unlike coconut oil, it is highly unorganised. Currently, there are no organised efforts to ensure the availability of quality tender coconuts on a continuous basis to meet the consumer demand. A substantial share of coconut production can be traded as tender coconuts if an integrated approach is adopted for marketing tender coconuts with the active participation of various stake-

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holders. This would in turn help in reducing the dependence of coconut price being decided by trends in coconut oil market.

Scope for production and marketing of minimally processed tender coconuts

Usually seven months old coconut is harvested and marketed as tender coconut. Though tender coconuts have great potential, there are some inherent difficulties also in their marketing when compared to bottled soft drinks due to bulkiness of the product, problems in disposing waste generated from the product, requirement of more time and labour for serving, difficulty to serve chilled, loss of freshness after some time of exposing the product, etc.

One option to overcome these difficulties is selling bottled tender nut water. But the bottling plant of tender coconut water without damaging its original taste requires heavy investment and the tender coconut water bottled this way will cost almost two times than that of the ordinary tender coconut water. Hence, a viable alternative is to adopt minimal processing technology to overcome the difficulties. Through minimal processing it is possible to serve the tendernut in the container of the nature itself and that too at a reasonable price to the consumer.

Minimal processing of tender coconut

The bulkiness of tender nut is due to the husk which accounts for two-third of the volume of tender nut. Handling of tender coconuts will be easy if a major part of the husk is removed. But, when partial removal of husk is done the colour of the nut will be changed to brown thereby reducing the attractiveness of the

nut. Under normal storage condition, the product also loses its natural flavour more easily than the unhusked nuts. Technologies for

bus stands etc. Waste generation is minimal as major portion of the waste is left at the farm itself for recycling as mulch in the coconut



Chief Minister of Kerala, Shri. V. S. Achuthanandan inaugurating the marketing of Coconectar, the processed tendernut in a function held at Agricultural Wholesales Market, Vengeri recently

minimal processing of tender nut have been developed for retaining the flavour and to prevent discolouration.

The technology for minimal processing of tender coconut developed by the Kerala Agricultural University involves dipping partially dehusked nut in a solution of 0.5 per cent citric acid and 0.5 per cent potassium metabisulphate for three minutes. For preparing this solution dissolve 5 grams citric acid and 5 grams of potassium metabisulphate in one litre water. Six litres of water is sufficient for treating 300 nuts. The product can be stored up to 24 days in refrigerated condition at 5-7° C. By using this technology, tender coconut can be served chilled like any soft drink. Optimized uniform size facilitates using of plastic crates and insulated chill boxes for transporting and storage facilitate distribution and marketing in different segments of market like super market, hospitals, hotels, way side shops, kiosks, railway stations,

basins. Containers will not cause any threat to the environment and even these containers can be reverted to the production belt through the distribution and supply network.

Integrated approach for marketing of minimally processed tender coconuts

Considering the potential, a project emphasising participatory integrated approach for marketing of minimally processed tender coconuts was approved by Coconut Development Board. Based on a proposal, the Board sanctioned a sum of Rupees 18.5 lakhs to the Agricultural Wholesale Market, Vengeri to implement the project in Kozhikode district in Kerala. The project envisaged various activities like identifying coconut gardens, identifying suitable palms, enrolment of farmers, identifying and training coconut climbers, enrolment of women self help groups for processing and packaging of the harvested tendernuts, arrangements for transporting the



processed nuts from identified collection centres, cooling of the same at a central place and marketing of the minimally processed tendernuts through selected retail kiosks. Integrated approach for marketing of minimally processed tender coconuts involving various stakeholders and activities is schematically depicted in Fig.1.

Location of coconut gardens and selection of palms

The required tendernuts for marketing as minimally processed product are procured from two panchayats having substantial coconut production, viz., Kavilumpara and Maruthomkara in Kunnummal Block of Kozhikode district. Procurement, processing and packaging of tender coconuts are organised in clusters formed within these two panchayats. Coconut gardens having better access to the collection point are considered. To supply 5000 nuts per day 250 palms are required. Hence, a total of 15000 palms are required in one panchayat

if the harvesting cycle is once in 60 days. From a single harvest it is expected to harvest 20 nuts from two bunches per palm. Two bunches are harvested at a time to reduce the cost. These two bunches are sold separately as two different products; one for tender nut water alone and the other for water and kernel. Palms with medium sized nuts are selected from the selected gardens. Very tall palms are avoided. Palms with an average of 10 nuts per bunch are preferred.

Identification of selected palms

It is envisaged to keep track of the trees selected under the project by a tracking mechanism. The tracking mechanism helps to identify the source of individual nuts. Clusters are identified using English alphabets. For example the first cluster name will be cluster A. In each cluster there will be 60 groups with 250 palms each. Each palm in a group will be numbered from 1 to 250. Each palm will be numbered in white colour in green background with enamel

paints. In case there is any complaints or shortcomings pertaining to the quality of nuts, the particular garden from which the nuts are harvested, the farmer and the



An unemployed youth being trained for harvesting tender nuts using a climbing device
particular tree can be identified and can avoid such palms for harvesting tender coconuts subsequently.

Collection centres

Collection centres are identified before the start of the programme. The number of collection centres is optimised for keeping the cost minimum. About 5000 nuts can be transported in a lorry and hence loading points are to be restricted to a maximum of ten.

Involvement of farmers

Participation of the coconut growers is the key to ensure a continuous supply of the product in sufficient quantities. The project for marketing of minimally processed tender coconuts provides a sustainable and enhanced income by value addition to the participating farmers. This programme provides a relief for the farmers from distress

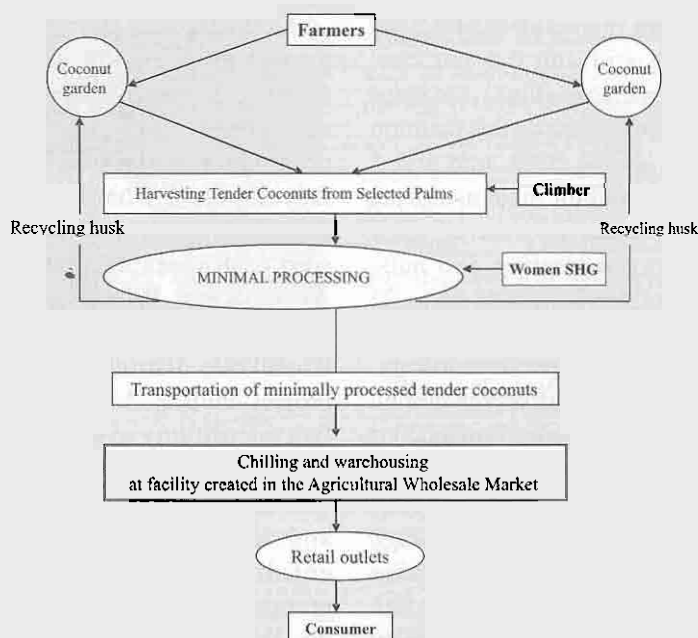


Fig. 1. Integrated approach for marketing of minimally processed tender coconuts



sale. It also assures a market throughout the year free from price fluctuation. Access to the collection point is an important criterion adopted for selecting farmers under the project apart from their willingness to involve in the project and supply the tender nuts. 1500 coconut farmers formed into 60 clusters spread over two Grama Panchayats are organized as stakeholders in the project for marketing minimally processed tender coconuts. The experience of involving farmers in the project is quite encouraging. Some farmers have wholeheartedly supported the project. Mr. Babu Muttatheplavu a farmer told that he considers this project as an effective intervention to provide a sustainable and enhanced income for coconut farmers, especially when the coconut market experiences violent fluctuations. He has been providing all support for organising activities in the cluster in which his coconut garden is included.

Support of local self governments

A notable feature in the implementation of the project is the pro-active role played by the local self governments. The Kunnummal Block Panchayat and Kavilumpara and Maruthomkara Grama Panchayats have been very actively supporting the project. The members of local bodies provide support to the project by facilitating the activities such as identifying the gardens, enrolment of farmers, identifying and training of climbers, helpers and women self help group members. Mr. A. R. Vijayan, Chairman, Standing Committee, Kavilumpara Grama Panchayat said that the project on marketing of minimally processed tender coconuts would be

sustained with the active support of grama panchayat and the activities would be replicated in more localities.

Identifying and training of climbers

One of the constraints often cited by coconut growers is the lack of availability of skilled palm climbers for harvesting as well as plant protection measures. Hence, this project has taken care to select and train adequate number of unemployed youths for palm climbing. Climbers are selected well in advance and they are trained in palm climbing using climbing devices. For the per day cycle of processing and marketing of 5000 tender coconuts 10 unemployed youths of Kudambashree unit would be involved for harvesting. One climber is expected to harvest from 25 palms.

The expertise of Mr. Joy Varghese a local technician hailing from one of the project sites, who runs a workshop at Peruvannamuzhy has been utilised for modifying the popular palm climbing device. The harvested nuts are lowered to the ground using rope and hooks, as is done in the case of harvesting seednuts to avoid damage to the tendernuts.

Processing of tendernuts by women self help groups

A salient feature of this project for marketing of minimally processed tender coconuts is the participation of members of women self help groups. Employment opportunities are created for the women from poor rural families organised under the Kudumbashree project for the processing and marketing. For the per day cycle of

processing and marketing of 5000 tender coconuts, it is envisaged to involve 100 trained women in processing and 100 women for sales through kiosks. On an average, a member of a group can earn about 50 rupees for half a day's work. Dehusking is done using a special tool, which is also developed by Mr. Joy Varghese. It consists of a sharp blade fixed on a wooden platform. The tendernut can be dehusked by placing the tendernut on the wooden platform and pushing down the lever attached to the sharp blade.

This is done in the garden itself so that the waste can be used as mulch for coconut palms. As described earlier the dehusked nuts are dipped in the recommended solution for three minutes. Then the nuts are taken out and kept for a while to dry them properly.

Then the nuts are carefully wrapped with polypropylene cling film ensuring that all the edges of the cling film come to the bottom side of the nut. The palm number is written on the sticker showing the brand name and pasted on the packaged nut. Plastic crates are used for transporting of the nuts.

Establishing a brand name

A brand name denotes a seller's promise to deliver a specific set of goods and services consistently to the buyers. For the successful marketing of minimally processed tendernut under a brand name, a consistent and continuous supply of quality product has to be ensured. Under the project the product name was finalised as *Coconectar*. Round stickers were designed for the product. The natural white colour of processed tender coconut is fully exposed by the cling wrap.

Transporting and cooling

The nuts collected from the farmers fields after processing and

nuts in insulated containers can be kept without any cooling arrangements.



Partial removal of husk using a dehusking tool

packing are transported to Agricultural Wholesale Market, Vengeri, where it is chilled overnight. The next day morning the chilled nuts are packed in insulated plastic containers which can keep the chilled nuts without any considerable increase in temperature and transported to selected shops and kiosks. In the kiosks, the chilled

Retail marketing

For retail marketing nuts are provided in insulated boxes of 50 nuts capacity. Under the project, it is envisaged to sell the product through kiosks set up in different locations on the highway in the Kozhikode city and neighbouring localities. Out of the total 50 kiosks, 25 kiosks are to be run by women

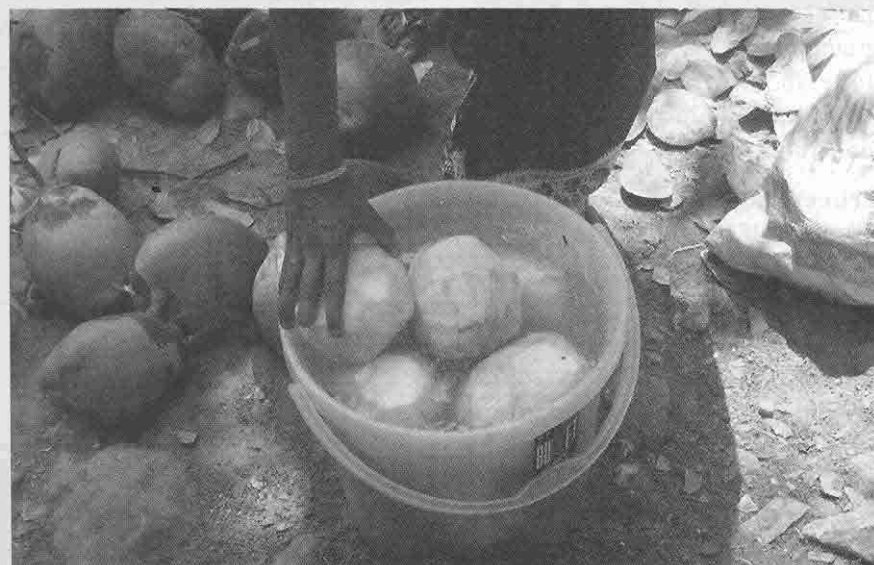
self help groups and remaining 25 kiosks by the existing private entrepreneurs. A margin of two rupees per nut would be provided to the kiosks if they procure the processed nuts from the Agricultural Wholesale Market at Vengeri.

Experiences of trial marketing

Trial marketing of the minimally processed tender coconuts was attempted as part of the project in Kozhikode city. All the supplied nuts were sold out quickly. It was found that most of the customers purchased the processed tendernut for consumption at home. The product was well appreciated by the consumers and they were ready to pay premium price for a good quality tender coconut. Keeping quality of the nuts was good. One of the suggestions by the shop owners was to market the processed nuts in different grades depending on the maturity of the tender coconuts; one grade for water alone and the other for water and endosperm for making tender coconut shake. Further, they opined that regular supply should be ensured to meet the demand from consumers on a continuous basis. In general, experiences gained from the trial marketing revealed that the marketing of tender coconut is technically feasible and economically viable.

Scope for enhancing quality of the product

The feedback obtained during the marketing trials indicated that the consumers prefer uniform taste and volume of tender coconut water. Being a natural product it is not always possible to maintain the uniformity for these traits. Factors like variety, harvesting time, maturity of nuts etc influence the



Dipping of partially dehusked nuts in a solution of citric acid and potassium metabisulphate



quality of tender coconuts. However, under the integrated approach, it is possible to provide tender coconuts

periodic intervals to ensure quality. Appropriate machineries are to be developed for processing the tender

women SHG members, workers, retailers etc. The office of the company will be housed in the Agricultural Wholesale Market at Vengeri. Efforts are on to form the company so that farmers, women SHGs and other stakeholders own the responsibility to take up various activities for marketing the processed coconuts in a profitable and sustainable manner.

Conclusion

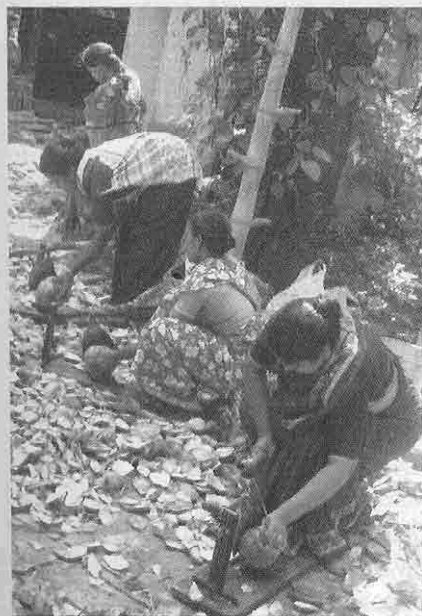
In the present context of price fluctuation in the coconut market, there is a need to implement programmes to promote alternative uses of coconut and value addition through product diversification. There is great potential for promoting tender coconut as a natural source of nutritious food and beverage. Through minimal processing of tender coconuts, it is possible to serve



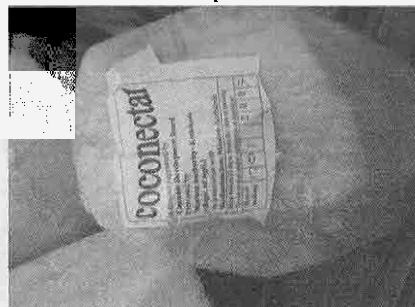
Wrapping the tendernut with cling wrap

with comparatively uniform quality by channelising the supply from identified clusters to specific retail outlets and also by avoiding palms from which inferior quality tendernuts were harvested. Biochemical evaluation of tendernuts can also be done at

coconuts. As a pre requisite to this, there is a need to develop standards for size and shape. Research has



Women self help group members processing the tender nuts



Coconectar - processed tender coconut with stickers

clearly indicated the superiority of Choughat Orange Dwarf as an ideal tender nut variety. However, at present there is only very few palms of this variety in farmers' gardens. Hence, the possibility for establishing coconut gardens of Choughat Orange Dwarf palms is to be explored.

Sustainability of the project

To sustain the project activities it is envisaged to form a company with share capital from all stakeholders, viz., farmers, climbers,

the tendernut just like artificially flavoured soft drinks at a reasonable price to the consumer. The project sponsored by Coconut Development Board for adopting an integrated approach for marketing of minimally processed tender coconuts offers scope for providing a sustainable and enhanced income to coconut growers. The initiative also creates enhanced income and employment opportunities for women self help groups. There is scope for replicating the successful aspects of this project to other coconut producing areas also.