

TRANSFER OF COCONUT PROCESSING TECHNOLOGIES - AN IMPACT ANALYSIS

*B.T.Rayudu, S.J.D.Bosco, T.Vidhan Singh, Neelofar I.K,
Manoj P. Samuel and S.Leena*

Introduction

Coconut (*Cocos nucifera* L), a traditional plantation crop, is grown in 93 countries across the world and supports the livelihood of more than 80 million small and marginal farmers. India is the third largest producer of coconut in the world with annual production of 12251 million nuts. However, coconut growers are many times deprived of sustained income from coconut plantation due to high degree of price fluctuations ranging from Rs.2.00 to Rs.4.50 per nut. Further, major consumption of coconut in the country is in the form of raw nuts (60%), copra (32%), tender nuts (5%) and seed nuts (3%). Hence its relative share in the international trade arena is non-significant as compared to the other major coconut producing countries viz., Philippines and Indonesia. Therefore, in recent years, value addition in coconut through product diversification is gaining momentum for sustaining coconut growers as well as creating employment opportunities among women self help groups and rural youth. In this direction, the Central Plantation Crops Research Institute of Indian Council of Agricultural Research has strengthened the post-harvest technology research in the IX Plan which resulted in the development of value added coconut processing technologies such as coconut chips, snow ball tender nut, copra dryers for quality copra, and coconut beverages for providing additional returns and also additional rural employment.

Interventions	Technologies				
	Coconut chips	Snow ball tender nut	Copra dryers	Coconut confectionary products	Coconut beverages
Training programmes	34	15	26	49	51
Skill demonstrations	45	25	30	45	42
Field visits	45	9	52	14	10
Exhibitions	16	16	9	12	15
Seminars	25	25	13	10	10
Advisory services	95	75	56	103	95

Interventions for transfer of coconut processing technologies

Consumers preference surveys were conducted on the coconut processing technologies developed by CPCRI and the results indicated that a positive



response among the consumers for these products. Hence, an integrated approach has been followed for disseminating coconut processing technologies and implemented through the Krishi Vigyan Kendra and other technology transfer units of CPCRI. The interventions viz., training programmes, skill demonstrations, field visits, exhibitions, seminars and advisory services were taken up for each technology. Details are presented in Table 1:

Methodology of study

Feed-back studies were conducted to know the effectiveness of interventions

followed for dissemination of coconut processing technologies and their adoption among the various clientele for the past five years. Based on this information, documented the success stories on coconut processing technologies. To evaluate the effective performance of the established coconut processing units, suitable data collection schedule was developed for each technology based on its important components and data was collected accordingly. The collected data were processed and analyzed.

Outcome of interventions

The results are based on the analysis of data collected from individual successful units. The extension strategy followed through integration of various interventions resulted in adoption of coconut processing technologies in a small/home scale as well as commercial level



Coconut processing technologies	Type of unit	Number of units established	Location	Economic viability (Average net profit (Rs)/ month/ unit)
Coconut chips	Small scale commercial units	2	Kolathur and Cochin	48,000
	Large scale commercial units	13	Kannur, Kozhikode, Palakkad, Cochin, Trivandrum, Coimbatore, Madras, Pondicherry, Tumkur, Pollachi and Bangalore	9,600
Snow ball tender nut	Small scale commercial units	5	Kasaragod, Kozhikode, Thrissur, Kottayam, and Pondicherry	7,000
Copra dryers	Small holders copra dryer	10	Kakkat, Mundott, Palanthalam, Seethangoli, Kumbala, Pady, Edneer, Nekraje, Padanna, and Kayyur.	1,280
	Shell fired copra dryer	14	Madikai, Kundamkuzhy, Banam, Muliya, Kuttikol, Bendadka, Puthige, Uduma, and Dindigal.	4,800
Coconut confectionary products and Coconut beverages	Home scale enterprises	5	Nileswar, Pallikker, Kumbala, Perambra, and Muliya	1,250

Table 2. Different Scales of Coconut Processing technologies Adoption

by different clientele. Details are in Table 2.

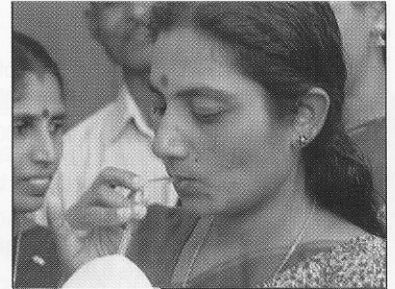
Impact of coconut processing technologies

The impact created by the adoption of coconut processing technologies are presented below

Conclusion

CPCRI has evolved economically viable value added coconut processing technologies such as coconut chips, snow ball tender nut, copra dryers, coconut confectionary products and coconut beverages. These technologies are being popularized among various clientele through an integrated approach. Effective transfer of coconut processing technologies has helped to establish 49 successful units in various parts

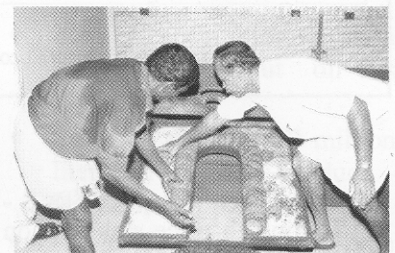
of the country which resulted in increasing the domestic consumption of coconuts (30,01,000 nuts) and its products (5,70,000 kg).



enhancing small (33), medium (14) and large (2) scale enterprises with an annual turnover of Rs.2,41,18,800.



providing capacity building among 3,000 rural women and youth on various coconut processing technologies



creating rural employment opportunities for rural women and youth (4,390 man months)



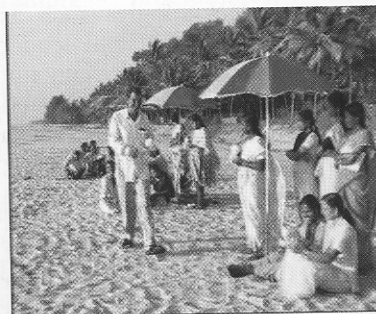
Coconut processing technology	Impact created
Coconut chips	<p>A total of 5,52,000 nuts are being processed for chips making by 15 units and 66240 Kg coconut chips are being produced annually.</p> <p>Total annual turnover of coconut chips units is Rs.79,48,8000</p> <p>Annual net profit of large scale unit is Rs.5,76,000 where as small scale unit is Rs.1,15,200.</p>
Snow ball tender nut	<p>A total of 44,000 nuts are being used for snow ball tender nut making by five units and around 40,000 snow ball tender nuts are being produced and sold annually.</p> <p>Total annual turnover of snow ball tender nut units is Rs.6,00,000</p> <p>Annual net profit by each snow ball tender nut unit is Rs.56,000</p>
Copra dryers	<p>A total of 24,00,000 nuts are being used for quality copra making by 24 units and 4,90,000 kg quality copra are being produced and sold annually.</p> <p>Total annual turnover of the copra dryer units is Rs.1,53,60,000</p> <p>Annual net profit by small holder dryer unit is Rs.15,360 where as shell fired dryer unit is Rs.57,600.</p>
Coconut confectionary products and beverages	<p>A total of 9,000 nuts are being used for making various coconut based products and 4,500 kg confectionary products and 900 liters of beverages are being produced annually.</p> <p>Total annual turnover of the units is Rs.2,10,000.</p> <p>Annual net profit b each unit is Rs.15,000.</p>

Table 3. Impact of Coconut Technologies Adoption

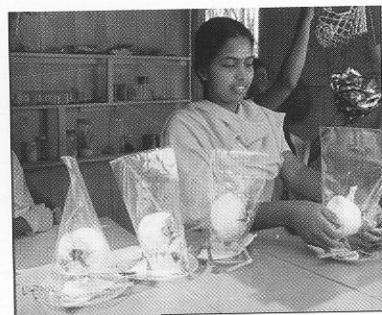
➤ fetching premium price (Rs.8 - 21) leading to price stabilization based on the type of product



➤ establishing chain of coconut product parlors (49 commercial enterprises)



➤ generating an additional income of Rs.39,64,000.



➤ ensure profitable coconut cultivation by generating an additional income of around Rs.10,000 to 20,000 through value addition



The above analysis shows that the coconut processing technologies developed by CPCRI are expected to have a higher domestic demand in future.

B.T.Rayudu, S.J.D. Bosco, T. Vidhan Singh : Senior Scientists (CPCRI) and Neelofar I.K, Manoj P. Samuel, S.Leena, Senior Training Assistants, (KVK) Central Plantation Crops Research Institute, Kasaragod-671 124, Kerala, India.