



# Value addition in coconut: Consumer profile, awareness and consumption pattern of Desiccated Coconut

Sachu Zachariah John<sup>1\*</sup> and K.N. Ushadevi<sup>2</sup>

<sup>1</sup> Dhoni Farm, Kerala Livestock Development Board, Palakkad 678 009, Kerala, India

<sup>2</sup> College of Co-operation, Banking and Management, KAU P.O., Thrissur 680 656, Kerala, India

Received 5 March 2020 ; received in revised form 25 May 2020 ; accepted 5 June 2020

## Abstract

The consumer profile, awareness on and consumption pattern of Desiccated Coconut (DC) was studied in three districts of Kerala selected by purposive sampling viz., Trivandrum, Ernakulam and Kozhikode. In Gross Value Output (GVO) of Kerala, coconut crop holds first position in Kozhikode and second position in both Ernakulam and Trivandrum. The respondents were selected by snowball sampling from elite class falling in the 'upper middle class' of the social classification proposed by Kotler and Armstrong. Out of 376 persons totally interacted in the three centres (132 from Thiruvananthapuram, 116 from Ernakulam, 128 from Kozhikode), 63 per cent were found to be aware of DC and 54 per cent were purchasing it. Among those aware, 86 per cent were purchasing it, which revealed high market potential for the product. Subsequently 60 consumers purchasing DC were selected from each urban centre by random sampling, bringing the total number of respondents to 180 for the purpose of further analysis. Ninety five per cent of the respondents were graduates and postgraduates, 37 per cent were professionals and 30 per cent were government and private employees. Monthly income of 69 per cent of the respondents ranged from Rs. 0.75 to 1.5 lakhs. Ninety- eight per cent of the consumers preferred package size of 250 g or less. Sixty per cent of the consumers preferred to purchase DC only from supermarkets and the rest from both supermarkets and retailers. The monthly expenditure on DC in food was estimated to be 3.1 per cent. Since DC had everyday use and almost half of the consumers had no specific interval between two purchases, the stock of the product had to be regulated for continuous supply. Considering DC as an upcoming product in the market irrespective of rural and urban areas, appropriate awareness and promotional activities are to be undertaken by the marketers.

**Key words:** Coconut value addition, Consumer awareness, Consumer profile, Consumption pattern, Desiccated coconut

## Introduction

Value addition of agricultural produce may result in fetching higher income to the farmers, generation of rural employment, checking of price collapse of crops at the time of glut and increasing shelf life of the produce. Coconut is the principal cash crop occupying 41 per cent of the net cultivated area and supporting lakhs of marginal and small farmers of Kerala (CDB, 2018). Despite the multitude opportunities for product diversification, value of coconut is regarded mostly in terms of copra or

coconut oil and it is necessary to delink its dependency by developing and popularizing other value-added products (Mannekote and Kulas, 2016). Jose (2015) projected urban India as the takers of value added products and stressed the need for introducing, making available and marketing value added coconut products in cities since more than 78 per cent of the urban population are in 63 major cities of India. Ushadevi (2013) had done an empirical analysis on the consumer preference and attitude towards branded coconut oil and identified availability, quality and packaging as the important

\*Author for correspondences: Phone: 9567226453, Email: sachuzj@yahoo.com

attributes that influenced the purchase decision of consumers. John and Ushadevi (2018), while studying the awareness and consumption pattern of virgin coconut oil in urban centres of Kerala, reported that 82 per cent of the test population were aware of virgin coconut oil and among them, 90 per cent were consuming it.

Desiccated coconut (DC) is another popular and important value-added product that is gaining fast acceptance in the market. It is the disintegrated and dehydrated coconut meat used as a substitute to grated coconut in food preparations. Apart from households, confectionary and bakery units are the main consumers of DC in the organized sector. The traditional way of using coconut in many of the dishes cherished by people in Kerala cuisine is a cumbersome process. It involves procuring fresh coconuts, dehusking, breaking, grating and grinding. Here comes the importance of DC, which will simplify the process and help in saving time in the kitchen in the current era of urbanisation and dynamic work culture. While positioning a new product, marketers need to analyse the awareness and consumption pattern of the prospective consumers in order to effectively plan their marketing strategies.

Chengappa (2004) observed that the consumption of processed food items form an insignificant portion of the menu in rural areas due to poor economic access and preference for fresh produce and it is changing gradually in semi-urban and urban areas due to rising real income, change in life styles, media and advertisements, urbanization and increasing quality consciousness. Kerala is fast moving towards urbanization. Those who can afford to prefer to have 'better things in life' and to reside in 'better side of town' and ultimately to have a 'better living'. They mainly include the middle class and upper middle class, comprised of professionals, independent businesspersons, corporate managers and average pay white- and pink collar workers. The social classification proposed by Kotler and Armstrong (2012), seems valid for Kerala too.

Coconut, at present having four times more area than the staple food rice, is an integral part of the Keralite's life. Around 50 per cent of coconut production is used for culinary and religious purposes, 35 per cent is converted to copra, 11 per cent for tender nuts, two per cent for seed purpose and hardly two per cent for oil production (Muraleedharan and Jayashree, 2013). The access and use of raw coconut products are being limited to the new urban population and hence value-added coconut products have vast market potential among them. Under these circumstances the study on the consumer profile, awareness and the consumption pattern of DC in Kerala was undertaken, the results of which may be helpful for the marketers to plan their marketing strategies.

## Material and Methods

Three districts of Kerala viz., Trivandrum, Ernakulam and Kozhikode were selected or conducting the study. In Gross Value Output (GVO) of Kerala, coconut crop holds first position in Kozhikode and second position in both Ernakulam and Trivandrum (CDB, 2013). These districts are placed almost equidistantly along the length of Kerala and represent southern, central and northern zones of the state. Purposive sampling (Palys, 2008) was implemented for selecting the urban centres which have fixed entities and known description. Since DC is having a niche market at present, the sample respondents were selected from the urban centres of Kerala focusing on the elite class consumers. The socio-economic characters, particularly education level, professional status and income level of the respondents in the study tempt to infer that the selected elite class in different urban centres are falling in the middle class of the social classification of Kotler and Armstrong (2012). They defined middle class in two categories: the 'upper middle class' and the 'middle class'. The upper middle class comprised of professionals, independent business persons and corporate managers who possess no unusual wealth and who believe in education, are joiners and highly civic

mindful and want the 'better things in life'. The second category, the 'middle class', are average pay white and blue collar workers who live in the better side of the town. They buy popular products to keep up with trends. Better living meant owning a nice home in a nice neighbourhood with good schools. Snow ball sampling (Goodman, 1961; 2011) was adopted initially to find out the consumers who were aware of DC. From 376 persons thus interacted with, 238 consumers (63 per cent) were aware of it. However, only 204 consumers (54 per cent) who were purchasing and using DC were surveyed. Sixty consumers each were selected by random sampling for the purpose of analysis from each urban centre, bringing the total number of respondents to 180, for the purpose of analysis.

Data collection was made during December 2017 to April 2018 for a recall period of one year and the monthly average was worked out. Data was collected using pre-tested structured interview schedule. Descriptive statistics was used as tool for analysis.

## Results and Discussion

### *Profile of consumers*

The survey on the study project was purposively concentrated towards elite class of people living in urban centres on which natural compulsions for the use of value-added products may normally be imposed. This elite group is expected to have higher education, likewise higher professional status and higher income.

Data given in Table 1 revealed that 81 per cent of the total respondents were between 31 and 50 years age group, who were in active family life. In Ernakulam and Kozhikode, 86 and 85 per cent respondents belonged to this group whereas in Trivandrum, only 70 per cent constituted this age group. Most of the total respondents (78 per cent) were male, whereas a higher per cent of 87 was observed in Trivandrum compared to Ernakulam and Kozhikode. All the selected respondents were

*Table 1.* Profile of the consumers of DC

Particulars	Trivandrum (n=60)	Ernakulam (n=60)	Kozhikode (n=60)	Overall (n=180)
Age				
<30	6(10)	4 (7)	3 (5)	13 (7)
31-50	42 (70)	52 (86)	51 (85)	145 (81)
>50	12 (20)	4 (7)	6 (10)	22 (12)
Gender				
Male	52 (87)	47 (78)	42 (70)	141 (78)
Female	8 (13)	13 (22)	18 (30)	39 (22)
Marital status				
Married	60 (100)	60 (100)	60 (100)	180(100)
Unmarried	-	-	-	-
Family size				
2 members	-	2 (3)	-	2 (1)
3 members	9 (15)	9 (15)	9 (15)	27 (15)
4 members	32 (53)	28 (47)	34 (56)	94 (52)
5 members	9 (15)	12 (20)	16 (25)	37 (21)
6 members	7 (12)	7 (12)	1 (2)	15 (8)
7 members	3 (5)	2 (3)	1 (2)	6 (3)
Education				
High school	-	2 (3)	2 (3)	4 (2)
Higher secondary	-	2 (3)	4 (6)	6 (3)
Graduate	42 (70)	40 (67)	44 (74)	126 (70)
Postgraduate	18 (30)	16 (27)	10 (17)	44 (25)
Occupation				
Farmer	-	-	2 (3)	2 (1)
Govt. employee	4 (7)	11 (18)	8(13)	23 (13)
NRI	4 (7)	9 (15)	6(10)	19 (11)
Business	11 (18)	6 (10)	6 (10)	23 (13)
Housewife	4 (7)	6 (10)	4 (7)	14 (8)
Private employees	8(13)	11 (18)	12 (20)	31 (17)
Professional	29 (48)	17 (29)	22 (37)	68 (37)
Monthly Income (Rs.)				
<=75000	11 (18)	8 (13)	14 (23)	33 (18)
75001-150000	40 (67)	44 (74)	40 (67)	124 (69)
>=150001	9 (15)	8 (13)	6 (10)	23 (13)

(Figures in parentheses denote percentages)

married. The family size is a crucial factor in deciding the purchase behaviour, particularly the quantity of the products purchased. More than half of the respondents were having four-member families and another 31 per cent had 5 to 7 member families, with almost even distribution in different urban centres.

Notwithstanding the above factors, education, occupation and income level which invariably decide the social class have a more significant role in deciding the consumption pattern. A family's position in the social structure creates certain

orientations which are undoubtedly reflected in spending pattern. From Table 1 it could be seen that 95 per cent of the total respondents were graduates and postgraduates. Occupation wise classification revealed that the largest group was professionals with 37 per cent of the respondents. Among the different regions it was highest in Trivandrum with 48 per cent. Businesspeople, NRIs' and housewives who were having no regular employment constituted 13, 11 and 8 per cent, respectively, of the total respondents. Employees in the government and private sector together constituted 30 per cent. Only one per cent were farmers, in fact they were planters living in urban centres to have a more comfortable life with good medical and recreation facilities, and facilities for higher education and employment for their children.

It is self-evident that the consumption pattern of the poor and rich households was markedly different. The income level of the people had direct impact on the consumers' off take of products, consumption pattern, frequency of purchase etc. It is important for the marketers to identify appropriate consumer segments with different levels of income while evolving marketing strategies. The data revealed that monthly income of majority of the respondents was high; for 69 per cent of the total respondents it ranged from Rs 0.75 to 1.5 lakhs and for 13 per cent respondents it was more than Rs 1.5 lakhs. An overall analysis of the consumer profile pointed out that this elite class of respondents might have an attitude towards spending more on consumer goods and services.

### *Awareness and usage of Desiccated Coconut*

Having awareness about a product among the consumers is the pre-requisite for successful

marketing. The level of awareness may vary with the product type and consumer characteristics, regional differences, social class, income level, education level, occupation, personal characteristics of the consumers etc. Conventional and non-conventional sources of information, distribution outlets of the products, promotional activities by the marketers etc. can influence the awareness creation among the consumers. DC is relatively a recent entry in the market and the study on the awareness level among the consumers about the products will help the marketers to plan their modus operandi on the marketing of the products.

Out of 376 persons interacted with in the three regions, in toto 238 persons (63 per cent) were found to be aware of the product and 204 persons (54 per cent) were purchasing and using it. Only 86 per cent of the respondents who were aware about the product were purchasing DC across all three regions (Table 2). In Kozhikode, the respondents who were aware of the product (only 54 per cent) and buying it (only 48 per cent) were less compared to Trivandrum (67 and 55 percent respectively) and Ernakulam (70 and 60 per cent respectively). However, the respondents among those who are aware of the product and buying it did not vary much among different regions, ranging between 83 to 88 percent.

The awareness level of different classes of people about the same products may vary. Padma and Andal (2016) studied the awareness of value-added coconut products among the rural coconut farmers with an intention of attracting the farmers towards initiating agripreneurships in those products and thereby increasing their income. They reported low to moderate level of awareness about ten different

*Table 2.* Awareness and usage of DC

Particulars	Number of persons interacted with	Number and % of persons aware of DC amongst those who were interacted with	Number and % of customers/ consumers of DC among the persons interacted with	Percentage of customers/ consumers among those who were aware of DC
Trivandrum	132	88 (67)	73 (55)	83
Ernakulam	116	81 (70)	70 (60)	86
Kozhikode	128	69 (54)	61 (48)	88
Total	376	238 (63)	204 (54)	86

products among the farmers. However, they observed significant relationship between the age, education, marital status and the awareness on the products, but no association between the income and the awareness. In this study about 63 per cent of the respondents expressed the awareness about different value added coconut products, but the respondents selected were from elite class who were in need of value added products partially due to the reduced access and availability of raw coconuts and easiness in usage.

**Monthly consumption of Desiccated Coconut**

Information on quantity as well as frequency of purchase of a product has a major role in framing the marketing strategies by the marketers. Since DC is relatively a newcomer in the market, this type of information is very important in forming market promotion plans for their products for specific regions. The monthly expenditure of DC to food in this study was estimated to be 3.1 per cent.

Among the respondents, 66 per cent of the households were having a monthly consumption of 501-1000 g DC (Table 3). Eight per cent had used a lower quantity of less than 250 g, 24 per cent used 251-500 g and 2 per cent more than 1000 g. Among different regions, similar consumption pattern was observed in Trivandrum and Ernakulam. The proportion who used 501 to 1000 g of DC per month was as high as 67 per cent in Ernakulam and nobody was found to use a quantity greater than 1000 g in Kozhikode. For most users of DC, it was not a complete substitute for grated raw coconut meat, but a supplementary item for cooking and hence the lower monthly consumption.

*Table 3.* Quantity of DC purchased by consumers

Quantity	Number and percentage (in parenthesis) of respondents			
	≤ 250 g	251-500 g	501-1000 g	>1000 g
Trivandrum	5 (8)	13 (22)	40 (67)	2 (3)
Ernakulam	5 (8)	13 (22)	40 (67)	2 (3)
Kozhikode	5 (8)	16 (27)	39 (65)	-
Overall	15 (8)	42 (24)	119 (66)	4 (2)

**Purchase frequency of Desiccated Coconut**

How often a consumer makes purchase is an important aspect in studying the consumer behavior, particularly purchase behaviour. Information on this will help the marketers and retailers to manage the stock of goods, whether the stock position should be high during a particular period or there was equal distribution throughout the period.

DC has everyday use and almost 50 per cent of the consumers irrespective of the region had no specific time interval between two purchases (Table 4). Twenty-five and 17 per cent of the consumers made weekly and fortnightly purchases, respectively. The risk of spoilage involved in long term storage of DC necessitated the consumers to go for frequent purchases in required quantities. The study indicated the need of marketers and retailers to assure continuous supply of quality brands of the product.

*Table 4.* Frequency of purchase of DC

Particulars	Number and percentage (in parenthesis) of respondents			
	Weekly	Fortnightly	Monthly	No specific time
Trivandrum	14(23)	6 (10)	9(15)	31 (52)
Ernakulam	20 (33)	13 (22)	-	27 (45)
Kozhikode	11(18)	11 (18)	6 (10)	32 (53)
Total	45 (25)	30(17)	15(8)	90 (50)

Preference towards the size of package for an item can influence the purchase behaviour of a consumer. Consumers, based on their income, social class, quantity requirement, shelf life and availability of the product, accessibility and nearness to the shop, frequency of purchase, type of consumer etc., prefer different package size of products. Hence it is important for the marketers to know how much quantity of different products the consumers demand at a time and thereby decide the package size of the product. Even though they consider economy in packaging, while deciding a package size, the consumers' requirement should be the base of such decisions. The package size preferred for DC by the respondents of different centres is presented in Table 5.

**Table 5.** Package size preferred by consumers of Desiccated Coconut

Particulars	Number and percentage (in parenthesis) of respondents		
	≤250 g	251-500 g	501-1000 g
	Trivandrum	59 (98)	1 (2)
Ernakulam	58 (97)	2 (3)	-
Kozhikode	59 (98)	1 (2)	-
Overall	176 (98)	4 (2)	-

Among 180 respondents 98 per cent preferred a size less than 250 g. Only a small per cent (2 per cent) preferred packs greater than 250 g. There was nobody preferring package size more than 500 g. Scientifically processed and packed DC has a shelf life of 4 to 6 months when stored at room temperature. However, once the packet is opened it has to be kept in a refrigerator under airtight condition, as otherwise chances are there for it to become rancid. Hence, most of the consumers preferred small packets to meet immediate use.

#### **Mode of purchase of Desiccated Coconut**

In the present marketing structure, mode of payment is also very important since other means of transaction such as e-payment other than cash purchase is becoming common.

From Table 6 it could be seen that 70 per cent of the respondents used cash as the only mode of purchase, only 2 per cent used debit card and 28 per cent used both cash and debit card. Since the respondents were from urban centres and belonged to elite class they depended also on debit card for their daily purchase.

#### **Source of purchase of Desiccated Coconut**

Source of purchase is an important factor influencing the decision-making process of the consumer and the purchase behaviour. The choice

**Table 6.** Mode of purchase of DC

Particulars	Number and percentage (in parenthesis) of respondents			
	Trivandrum	Ernakulam	Kozhikode	Overall
	Cash only	39 (65)	41 (68)	44 (73)
Debit card only	1 (2)	2 (3)	1 (2)	4(2)
Cash or debit card	20 (33)	17 (29)	15 (25)	52 (28)
Cash or credit card	-	-	-	-

of the source of purchase depend on several factors such as availability of the quality products at reasonable price, convenience of the consumer to shop, proximity of the source, availability of credit and flexibility in cash transaction, reliability etc. Information on source of purchase will help the marketers to arrive at appropriate distribution outlets according to the nature of the product and type of consumers.

There was no noticeable difference among the different regions regarding the source of purchase (Table 7). Among 180 respondents, 60 per cent preferred to buy DC only from supermarkets and 40 per cent both from supermarkets and retailers. The preference towards supermarket over other sources of purchase was evident from the data. Supermarkets provide variety of brands of products and displayed in a way that facilitates easy selection. Those who were having exclusive preferences towards certain branded items also purchased from supermarkets. The consumer could verify the quality details, date of manufacture, expiry period, price

**Table 7.** Source of purchase of DC

Particulars	Number and percentage (in parenthesis) of respondents			
	Trivandrum	Ernakulam	Kozhikode	Overall
	Direct marketing	-	-	-
Only Retailers	-	-	-	-
Only Supermarket	40 (67)	38 (63)	30 (50)	108 (60)
Retailers & supermarket	20 (33)	22 (37)	30 (50)	72 (40)

etc. of different brands before purchase. The respondents belonged to elite class and resided near the heart of the towns. Many supermarkets present in the proximity provided the respondents with easy access to the markets. None preferred only retailers and direct marketing.

#### **Conclusion**

The study was conducted among elite class of people living in urban centres who had higher education, higher professional status and higher income and were expected to have natural

compulsions to use value added coconut product, DC. However, out of 376 persons interacted with in the three regions viz., Thiruvananthapuram, Ernakulam and Kozhikode, only 338 (63 per cent) were aware of the product. Awareness had to be enhanced through mass media highlighting unique selling propositions like easy availability and ready to use nature of product. The fact that among those who were aware, 86 per cent of them purchased it utilising about 3.1 per cent of the monthly amount spent on food revealed the high market potential for the product. Since DC has everyday use and almost half of the consumers had no specific time interval between two purchases, the stock of the product should be regulated for continuous supply. Though the product has a shelf life of 4 to 6 months, once opened the packet has to be kept in refrigeration under airtight condition. Hence 98 per cent of the consumers preferred package size of 250 g or less. Since supermarkets provided a variety of brands displayed in ways facilitating easy selection, 60 per cent of the consumers preferred to purchase DC only from supermarkets and the rest from super market or retailers. Since DC is an upcoming product in the market in both rural and urban areas, appropriate awareness and promotional activities should be conducted by the marketers.

## References

- CDB [Coconut Development Board]. 2013. Consolidated Report, Concurrent Estimation of Coconut Production in Kerala 2012-13. [on line] Available: <http://www.coconutboard.in/docs/report-kerala-2012-13.pdf> [Sept.10. 2015].
- CDB [Coconut Development Board]. 2018. State/District/Blockwise area production, and productivity of coconut [on line]. Available: <http://coconutboard.nic.in/Statistics.aspx>[13 May 2018].
- Chengappa, P.G. 2004. Emerging trends in Agro-Processing in India. *Indian J. Agric. Econ.*, 59(1):55-74.
- Goodman, L.A. 1961. Snowball sampling. *Ann. Math. Statist.*, 32 (1): 148-170.
- Goodman, L.A. 2011. On respondent-driven sampling and snowball sampling in hard-to-reach populations and snowball sampling not in hard-to reach-populations [on line]. Available: <https://doi.org/10.1111/j.1467-9531.2011.01242.x> [Feb.17.2017].
- John, S.Z. and Ushadevi, K.N. 2018. Consumer profile, awareness and consumption pattern of virgin coconut oil in Kerala. *Adv. Res. J. Soc. Sci.*, 9 (2): 179-186.
- Jose, T.K. 2015. Let us make 'Make in India' futuristic coconut products. *Indian Coconut J.*, 58(2): 6-7.
- Kotler, P. and Armstrong, G. 2012. *Principles of Marketing*, New Jersey, Pearson, Prentice Hall Inc. 140p.
- Mannekote, J.K., and Kulas, S.V. 2016. Value addition to coconut, opportunities and challenges. *Indian Coconut J.*, 55(11):4-9.
- Muraleedharan, K., and Jayashree, A. 2013. Industrialisation of coconut oil industry-opportunities. *Indian Coconut J.*, 55(11):4-9.
- Padma, D. and Andal, C. K. 2016. A study on awareness of coconut cultivation on value added products in Coimbatore district. *Int. J. Adv. Res. Comput. Sci. Manage. Stud.*, 4 (3): 55-60.
- Palys, T. 2008. Purposive sampling. In L. M. Given (Ed.) *The Sage Encyclopedia of Qualitative Research Methods (Vol.2)*, Sage: Los Angeles, pp.697-698.
- Ushadevi, K.N. 2013. Consumer preference and attributes towards branded coconut oil- An empirical analysis. *Business Sci. Inter. J.*, 1(1): 147-153.