

Economic analysis of kokum fruit products in Sindhudurg, India

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ABSTRACT

Kokum is one of the important minor fruit crop in Konkan region of Maharashtra state. Many cottage scale and small scale processing units are developing and thriving well in Konkan region which utilize large quantity of the neglected fruits like kokum for processing in different products like dried kokum rind, amrit kokum(syrup), kokum butter and agal. Processing and preservation of fruits has been a practice in our country since time immemorial.. The processed products of kokum have bright future in European markets. The present study was conducted in Sindhudurg district of Maharashtra state with specific objectives, to study cost and returns structure in kokum processing units & to estimate value addition as well as employment potential in kokum processing units. The data from 30 kokum processing units were collected with the help of specially designed schedules. The data pertains to the production season of 2003-2004. The study revealed that the total cost of processing of one-quintal fruits for kokum syrup was Rs. 2440.88 /-, for agal Rs.867.90 /- and for kokum rind it was Rs.1102.18 /-. The gross returns obtained after processing one-quintal kokum fruits into kokum syrup was Rs. 3780.52/-, where as gross returns from kokum agal and kokum rind was Rs. 1344.24 and Rs.1707.10, respectively. Net returns obtained were Rs. 1339.63/-, Rs.476.33 /- and Rs.604.91/-, respectively from kokum syrup, kokum agal and kokum rind. The employment generation was more due to the seasonal nature of work.

Key words : Economics, Kokum Processing, Value addition, Employment potential.

INTRODUCTION

Kokum (*Gracinia indica*) is one of the important minor fruit crop in Konkan region of Maharashtra state. The soil and agro climatic conditions of Konkan region are suitable for kokum. The fruit of kokum is antihelmintic, cardiogenic and useful against piles, dysentery, pains and heart complaints. Syrup from fruit juice is made into an acid drink 'solkadhi' which serves as a buttermilk. Kokum fat extracted from kokum seeds is called as kokum butter. Many cottage scale and small scale processing units are developing and thriving well in Konkan region which utilize large quantity of the neglected fruits like kokum for processing into different products like dried kokum rind, amrit kokum (syrup), kokum butter and agal. The kokum butter extracted from kokum seed is nutritive, demulscent, astringent and emollient. It is suitable for ointment suppositories and other pharmaceutical purpose. It is also used for local applications in ulcerations and fissures of lips, hands, legs etc. The cake left over is used as cattle feed. Most of the fat produced in India is exported to Japan, Netherlands, Italy, U.K., Singapore and Malaya. Also the other processed products from kokum fruits have bright future in European markets and quality products prepared from the fruits would ultimately add to the foreign trade of our country.

MATERIALS AND METHODS

The present study was conducted in Sindhudurg

district of Maharashtra state purposively, because there are several kokum-processing units situated in this district. The list of all such processing units was obtained from the District Industry Centre, Sindhudurg. The specific objectives of the study were 1). To study cost and returns structure in kokum processing units, 2) To estimate value addition and employment potential in kokum processing units. The data from 30 kokum processing units were collected with the help of specially designed schedules. The data pertains to the production season of 2003-2004.

RESULTS AND DISCUSSION

Per Unit and per quintal cost of processing:

To know the per liter cost of processing of kokum syrup, kokum agal and per kg cost of processing of Kokum rind as well as cost incurred for processing of one quintal kokum fruits in different products, The analysis was carried out separately for kokum syrup, agal and kokum rind and the results of same presented in Table 1.

Cost for preparation of one-liter kokum syrup was Rs. 23.89/-, for preparation of one liter of agal the cost incurred was Rs. 18.05/- and for preparation of one Kg. of kokum rind the cost incurred was Rs. 15.28/- . Cost of processing of kokum syrup was comparatively more than other two products because of cost of sugar required for preparing syrup. Another reason for high cost was the cost of containers. The gross returns obtained from kokum syrup, agal and kokum rind were Rs. 44.47/-, Rs. 33.60/

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Table 1 : Productwise cost of processing and returns into different products (Figures in Rs.)

S. No.	Particulars	Products		
		Kokum Syrup	Agal	Kokum Rind
1.	Raw material			
a.	Fruits	4.61	9.80	6.53
b.	Sugar	13.17	-	-
c.	Salt	-	0.60	0.29
d.	Jira	0.12	-	-
e.	Preservatives	0.08	-	-
2.	Containers	5.18	3.92	3.31
3.	Labour charges	1.96	1.48	1.25
4.	Other charges	0.11	0.08	0.07
5.	Depreciation on			
	a) Building	0.03	0.02	0.02
	b) Machinery	0.14	0.10	0.09
6.	Interest on			
	a) Working capital	3.38	2.55	2.16
	b) Fixed capital	0.85	0.64	0.54
7.	Total cost	28.72	21.70	18.37
8.	Gross return	44.47	33.60	28.45
9.	Net returns	15.76	11.90	10.08
10.	Cost of processing net of by product	23.89 /lit.	18.05 /lit.	15.28 /kg.

Table 2 : Cost of processing of one-quintal fruits into different products. (Figures in Rs.)

S. No.	Particulars	Products		
		Kokum Syrup	Agal	Kokum Rind
1.	Raw material			
a.	Fruits	392	392	392
b.	Sugar	1120.02	-	-
c.	Salt	-	24	17.99
d.	Jira	10.80	-	-
e.	Preservatives	7.41	-	-
2.	Containers	440.99	156.80	199.13
3.	Labour charges	166.69	59.37	75.40
4.	Other charges	9.88	8.51	4.46
5.	Depreciation on			
	a) Building	3.11	1.10	1.40
	b) Machinery	12.01	4.27	5.42
6.	Interest on			
	a) Working capital	287.61	102.26	129.87
	b) Fixed capital	72.76	25.87	32.85
7.	Total cost	2440.88	867.90	1102.18
8.	Finished products (Quantity)	85 lit.	40 lit.	60 kg.
9.	Gross return	3780.52	1344.24	1707.10
10.	Net returns	1339.63	476.33	604.91
11.	Added values			
	Gross (7-1a)	3388.52	952.24	1315.1
	Net (7-6)	1339.63	476.33	604.91

- and Rs.28.45, respectively.

Cost of processing of one-quintal fruits into different products:

The cost of processing of one quintal of kokum fruits into different products is worked out. For this purpose cost of material used as well as indirect costs like depreciation, interest on fixed and working capital etc., were considered. This information is presented in Table 2

Total cost of processing of one-quintal fruits for kokum syrup was Rs.2440.88/- for agal Rs.867.90/- and for kokum rind it was Rs.1102.18/-. In case of kokum syrup, out of total cost, share of subsidiary raw material was maximum (Rs.1138.23/-) followed by containers (Rs.440.99), fruits (Rs.392/-), interest on capital (Rs. 360.37 /-) and other charges (Rs.9.88/-). Regarding agal

out of total cost incurred, cost of fruits was maximum (Rs. 392/-) followed by containers (Rs.156.80/-), interest on capital (Rs. 127.13), labour charges (Rs. 59.37/-), salt (Rs.24/-), depreciation on building and machinery (Rs.5.37/-) and other charges (Rs.8.51/-). As regards processing of one quintal fruits into kokum rind out of the total cost, maximum cost was incurred on fruits (Rs.392/-) followed by cost of containers (Rs.199.13/-), The cost of containers was (Rs.199.13/-), interest on capital was (Rs. 162.72/-), labour charges (Rs.75.40/-). Depreciation on building and machinery (Rs. 6.82/-) and other charges were (Rs.4.46/-).

The gross returns obtained after processing one-quintal kokum fruits into kokum syrup was Rs. 3780.52/-, where as gross returns from kokum agal and kokum rind were Rs. 1344.24 and Rs.1707.10, respectively. Net returns were obtained by deducting total cost from gross

Table 3 : Working season, employment and wage rates in kokum processing units.

S. No.	Particulars	Units
1	Working season (days)	131.30
2.	Per day/unit employment (persons)	
a.	Skilled	1.83
b.	Unskilled	
i.	Male	2.98
ii.	Female	3.01
	Total	7.81
3.	Per season per unit employment (Days)	
a.	Skilled	240.37
b.	Unskilled	
i.	Male	391.37
ii.	Female	395.21
	Total	1026.95
4.	Total employment for all unit (Days)	
a.	Skilled	3124.80 (23.41)
b.	Unskilled	
i.	Male	5087.81 (38.11)
ii.	Female	5137.73 (38.48)
	Total	13350.34 (100.00)
5.	Wage rate per day (Rs.)	
a.	Skilled	80.00
b.	Unskilled	
i.	Male	70.00
ii.	Female	50.00

(Figures in the parentheses indicate percentage to total)

returns. Net returns obtained were Rs. 1339.63/-, Rs.476.33 /- and Rs.604.91/-, respectively from kokum syrup, kokum agal and kokum rind. Regarding finished product obtained after processing of one-quintal raw fruits into syrup was 85 liters. The finished product incase of kokum agal received was 40 liters and finished product of kokum rind was 60 kg.

Due to processing of kokum into different products, its sale value has increased. This increased value after processing is called as added value. The gross added value from kokum syrup was maximum (RS. 3388.52 /-) for kokum agal it was Rs. 952.24 /- while for kokum rind it was Rs. 1315.10 /-. Similarly net added value of kokum syrup was higher (Rs.1339.63 /-) than kokum agal (Rs.476.33 /-) and kokum rind (Rs.604.91/-). From the result it is clear that the value addition is remunerative in case of syrup preparation.

Employment potential in kokum processing units:

Most of the operations in kokum processing units were done with the help of human labour for that; considerable amount of labour is required for these operations. Hence the information regarding working season, employment created and wage rates paid to the labourers was collected and result of the analysis are presented in Table 3.

The employment in kokum processing units was classified as skilled labourers who were operating machinery and doing skilled work and unskilled labourers doing other kinds of work i.e. washing, filling of cans, cleaning utensils, etc. The per day per factory employment worked out to 7.81 persons consisted of 1.83 skilled persons, 2.98 unskilled males and 3.01 unskilled female labourers. The labourers employed were more due to the seasonal nature of work Per season per factory employment of skilled and unskilled labourers together worked out to 1026.95 days. Wage rate paid to skilled labour was Rs.80 /- per day. For unskilled labour it was

Rs.70/- per day While for unskilled female labour it was Rs. 50 /- per day.

The business of kokum processing on large scale is quite remunerative but it also requires good amount of capital particularly, the working capital mainly for buying kokum fruits. Most of the operations in kokum processing units are carried out manually. Therefore, this business provides employment opportunities to rural people as well as self-employment opportunities to small entrepreneurs. If adequate capital and raw material is available and if there is availability of labour in the season, the large-scale units are worthwhile.

Out of three products, processing of kokum into kokum syrup is more profitable followed by kokum agal and kokum rinds. All these products are important from point of view of human consumption though their capital requirement and profitability are varying.

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