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Marketing of jamun in Sindhudurg district of Maharashtra

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Abstract
The present data is based on the primary data collection done in the Sindhudurg district of Maharashtra, the information collected from jamun growers, pre-harvest contractors, village traders, commission agents/wholesalers and retailers/hawkers. Sindhudurg district was purposively selected from the Konkan region of Maharashtra. At the time of the principal survey, it was observed that the major quantity of jamun fruits was produced in the Sindhudurg district and marketed in the Mumbai fruit market so the Mumbai fruit market was selected purposively. Jamun is an important minor fruit crop produced in the Sindhudurg district that has good marketing value. The presented data is based on the marketing practices, disposal and identified marketing channels with their efficiency of jamun fruit studied in Sindhudurg district. marketing efficiency was obtained by using Acharya's method. Every jamun grower followed marketing practices like sorting and packing. Market efficiency was higher in Channel -III which indicate direct selling to commission agent was more profitable. The market efficiency was greater in Channel- III 1.30 and lower in Channel I (0.50) and Channel IV (0.50).

Keywords: Marketing, jamun, agents/wholesalers, retailers/hawkers

Introduction
Jamun is an important minor fruit crop produced in the Sindhudurg district that has good marketing value. Jamun fruit crop with low maintenance gives better yield. Jamun as a whole plant has medicinal and commercial importance. Jamun seeds are used for curing diabetes. Jamun wood is one of the best timbers. Honey bees are reared on Jamun trees. Scientific studies on the importance of jamun cultivation will help create secondary income sources for farmers.

The Jamun trees chosen from the Sindhudurg district were largely from naturally growing Jamun trees that were marketed to various marketplaces via various marketing firms. However, scientific research is scarce on cultivating and marketing these fruits.

Marketing is vital in fruit post-harvest operations. The current state of the fruit trade is characterized by expensive shipping, grading, and packaging costs, as well as malpractices such as numerous market charges, illegal deductions, and a lack of storage facilities. One major source of worry is a lengthy chain of middlemen, which reduces the percentage of Jamun growers' consumer expenses. Fruit merchants, commission brokers, and retailers are well-organized, whereas growers are dispersed across the vast territory with no collective organization. In certain circumstances, fruit growers sell their trees on a contract basis at low prices, even when the plants are in bloom. Growers obtain low returns due to marketing inefficiency, and consumers wind up paying more than necessary. To overcome these issues, alternative marketing methods for selling these fruits are required.

Methodology
For the present study, five sets of interview schedules were specially designed to collect information from jamun growers, pre-harvest contractors, village traders, commission agents/wholesalers and retailers/hawkers. In the first stage, Sindhudurg district was purposively selected from the Konkan region of Maharashtra. At the time of the principal survey, it was observed that the major quantity of jamun fruits was produced in the Sindhudurg district and marketed in the Mumbai fruit market so the Mumbai fruit market was selected purposively. Five preharvest contractors and five village traders were chosen randomly from the research area. Five commission agents were chosen at random from the market. Five retailers were chosen at random from the Mumbai city's consuming districts.

Estimation of marketing cost

The cost incurred for the marketing of Jamun by growers and market functionaries on harvesting, transport, grading, packing etc. was worked out with the help of the following formula

$$MC = C_f + \sum_{i=1}^{n} C_i$$

Where,
MC = Total cost of marketing
Cf = Cost incurred by the farmer
Ci = Cost incurred by i^{th} intermediary.

Estimation of market margin

The market margin of all the market intermediaries was estimated by using the following formula.
Where,

$$TM = \sum_{i=1}^{n} [P_{ri} - (P_{pi} + C_{mi})]$$

TM = Total market margin
Pri = Sale price of ith intermediary
Ppi =Purchase price of i^{th} intermediary
Cmi = Cost incurred on marketing by the i^{th} intermediaries

Estimation of marketing efficiency

The marketing efficiency of identified marketing channels were worked out by using acharya's formula i.e., ratio approach

$$MME = \frac{FP}{(MC+MM)}$$

Where,
MME = Modified measure of marketing efficiency
FP = Price received by farmers
MC = Total marketing cost
MM = Net marketing margins.

Result and Discussion

Marketing practices in Jamun

Jamun fruit is perishable, so for the maintaining quality of the jamun fruit various marketing practices were followed by the jamun grower.

Table 1: Marketing practices in jamun

Sr. no	Marketing practices	Small (N=37)	Medium (N=58)	Large (N=25)	Total (N=120)
1	Removing of trashes	37.0 (100)	58.0 (100)	25.0 (100)	120 (100)
2	Sorting	37.0 (100)	58.0 (100)	25.0 (100)	120 (100)
3	Packing	37.0 (100)	58.0 (100)	25.0 (100)	120 (100)
	No. of growers	37.0 (100)	58.0 (100)	25.0 (100)	120 (100)

(Figures in parentheses indicate the percentage to total No. of growers)

It was observed from Table 1 that the marketing practices like removing trash, sorting and packing were followed by every jamun grower.

Per farm production and disposal pattern of jamun fruits

The per-farm disposal pattern of the jamun shown in Table 2.

Table 2: Per farm production and disposal pattern of jamun fruits (figures in kg.)

Sr. no	Particulars	Small (N=37)	Medium (N=58)	Large (N=25)	Overall (N=120)
1	Total production	1552 (100)	2121 (100)	3242 (100)	2179.1 (100)
2	Wastage at the farm level	45.0 (2.90)	47.0 (2.20)	50.0 (1.50)	47.0 (2.2)
4	Used for processing	0.0 (0.0)	0.0 (0.0)	250 (7.7)	52 (2.5)
3	Family consumption	12 (0.7)	14 (0.7)	15 (0.5)	14 (0.6)
5	For relatives and friends	10 (0.6)	20 (0.9)	20 (0.6)	17 (0.7)
6	Marketable surplus	1485 (96)	2030 (96)	2895 (89)	2042 (94)

(Figures in parentheses indicate the percentage of total production)

From Table 2 it was clear that a small sample size of farmers produced 1552 kg of jamun fruits, out of which 1485(96%) of jamun fruits were sold. 12 kg (0.7%) was used for family consumption and 10kg (0.6%) was used for the distribution of jamun in relatives. 45 kg (2.90%) were loosed at the farm level.

In the case of a medium sample size of a farmer, total production was 2121 kg out of which 2030kg (96%) jamun fruits were marketed, 20 kg (0.9%) were consumed by relative, 14 kg (0.7%) fruits were consumed by the family and 47 kg (2.20%) loosed at farm level. A large sample size of farmers produced 3242 kg of jamun, out of which 2895(89%) of jamun fruits were sold. For family consumption and the distribution of jamun in relatives 15 kg (0.5%) and 20kg (0.6%) were absorbed. 50 kg (1.50%) were loosed at farm level.

At the overall level, the per farm yield of jamun fruits was 2179.1 kg, out of which 47 kg (2.2%) was lost at the farm level, 14 (0.6%) kg was used for family consumption,52 kg (2.5%) for the processing purpose, 17 kg (0.7%) for relatives and friends and remaining 2042 kg (94%) sold in the market. Joshi *et al.* (2007) [3] observed similar results in Sindhudurg district of Maharashtra.

Marketwise quantity sold

The information on the place of market and average quantity marketed by sample growers is presented in Table 3.

Table 3: Average quantity sold by jamun growers

Sr. No.	Place of Marketing	Small		Medium		Large	
		No. of growers (N=37)	Qty. (kg)	No. of growers (N=58)	Qty. (kg)	No. of growers (N=25)	Qty. (kg)
1	On farms	20.00 (54.00)	809 (54.4)	28.00 (48.20)	970 (47.7)	8.0 (32)	863 (29.8)
2	Local Market	15.00 (40.50)	599 (40.5)	22.00 (37.90)	769 (37.8)	14 (56)	1691 (58.4)
3	Distant Market	02.00 (05.40)	77.00 (05.10)	08.00 (13.70)	291 (14.3)	3.0 (12)	341 (11.7)
	Total	37.00 (100)	1485 (100)	58.00 (100)	2030 (100)	25.00 (100)	2895 (100)

(Figures in parentheses indicate the percentage to total)

It was observed from Table 3 that, in a large group, the total quantity marketed was 2895 kg, out of this 863 kg (29.8%) was sold at the farm level. In the local market, 1691 kg (58.4%) quantity was sold. 341 kg (11.7%) sold to distant market.

In the small and medium groups, the maximum quantity was sold at farm levels 809 kg (54.4%) and 970kg (47.7%) respectively. A small group in which at the local market level 599 kg (405%) and 77 kg (5.1%) sold to a distant market. Medium group in which at local market level 769 kg (37.8%) and 291 kg (14.3%) sold to distant market.

Agency-wise sale of jamun fruits

The information about the quantity marketed by jamun growers through different agencies is presented in Table 4.

Table 4: Details of the agency-wise sale of jamun fruits

Sr. No.	Agency of Marketing	Small		Medium		Large	
		No. of growers (N=37)	Qty. (kg)	No. of growers (N=58)	Qty. (kg)	No. of growers (N=25)	Qty. (kg)
1	Pre-harvest contractor	20.00 (54.00)	809 (54.4)	28.00 (48.20)	970 (47.7)	8.0 (32)	863 (29.8)
2	Village trader	15.00 (40.50)	599 (40.5)	22.00 (37.90)	769 (37.8)	14 (56)	1691 (58.4)
3	Commission agent	02.00 (05.40)	77.00 (05.10)	08.00 (13.70)	291 (14.3)	3.0 (12)	341 (11.7)
	Total	37.00 (100)	1485 (100)	58.00 (100)	2030 (100)	25.00 (100)	2895 (100)

(Figures in parentheses indicate the percentage to total)

It was observed from Table 4 that, 863 kg (29.8%) was sold to pre-harvest contractors. In the local market, 1691 kg (58.4%) quantity was sold to village traders 341 kg (11.7%) was sold to the commission agent.

In small and medium groups, the maximum quantity was sold to pre-harvest contractors 809 kg (54.4%) and 970kg (47.7%) respectively. Small group in which at local market level 599 kg (40.5%) and 77 kg (5.1%) sold to commission agent. In the medium group at the local market level, 769 kg (37.8%) was sold to village traders and 291 kg (14.3%) was sold to commission agents.

Marketing channels for jamun fruits

It was observed that in the movement of jamun fruits from jamun growers to ultimate consumers, the village traders, pre-harvest contractors, commission agents/wholesalers, and retailers/hawkers were involved as intermediaries. with these intermediaries. The commodity passes through four different channels as presented below.

Table 5: Marketing channels for jamun fruits

Channels I	Producer – Preharvest Contractor – Commission agent – Retailer/Hawker- Consumer
Channels II	Producer – Village trader – Commission agent – Retailer/Hawker- Consumer
Channels III	Producer –Commission agent – Retailer/Hawker- Consumer
Channels IV	Producer – Preharvest Contractor – Village trader - Commission agent – Retailer/Hawker- Consumer

Table 6: Channel- quantity marketed by jamun growers through various channels

Sr. No.	Marketing channels	No of growers	Total quantity (kg)
1	Channels I	36.00 (30.00)	1521 (23.70)
2	Channels II	51.00 (42.50)	3059 (47.70)
3	Channels III	13.00 (10.83)	709.0 (11.00)
4	Channels IV	20.00 (16.66)	1121 (17.48)
	Total	120 (100)	6410 (100.0)

(Figures in parentheses indicate the percentage to total)

The information about marketing channels prevailing in the study area for jamun and the quantity of produce marketed through various channels is presented in Table 6, a maximum number of growers 51 growers were using channel II for marketing their produce they sale 3059 kg of jamun (47.70%), and 36 growers sold their produce through the channel I with 1521 kg (23.70%) of quantity, through channels III 13 growers & IV 20 growers' sale jamun with 709 kg (11%) 1121 kg (17.48%) respectively.

From Table 7 seen that; transportation cost was higher in channel IV is Rs. 8.50 compared to other channels. Followed by Channels II and III is Rs. 8.40 each. In Channel I the cost of transportation is Rs 8.30. The assembling, grading, packing, and cost for the harvesting in Channels I, II, III and IV are Rs. 0.10, Rs. 0.20, Rs 0.04 and Rs0.10 respectively. The losses of jamun fruits in the marketing process are because of the perishable nature of the fruit so the packing of jamun is important in transportation, the cardboard box is used for the packing of jamun. The cost of packing was the same in all channels Rs. 4.16. Market charges were the same in all channels Rs 1.60/kg. Loss during transportation is Rs. 1/kg.

Table 7: Cost of marketing of jamun in different channels of sale. (Rs. /kg)

Sr. No	Item cost	Channels			
		I	II	III	IV
1	Assembling, grading, packing and cost for harvesting	0.10 (0.66)	0.20 (1.30)	0.04 (0.30)	0.10 (0.60)
2	Cost of packing	4.16 (27.4)	4.16 (27.0)	4.16 (27.4)	4.16 (27.1)
3	Cost on transportation	8.30 (54.7)	8.40 (55.0)	8.40 (55.3)	8.50 (55.3)
4	Market charges	1.60 (10.5)	1.60 (10.4)	1.60 (10.5)	1.60 (10.4)
5	Loss during transportation	1.00 (6.00)	1.00 (6.50)	1.00 (6.50)	1.00 (6.50)
	Total	15.16 (100)	15.36 (100)	15.20 (100)	15.36 (100)

(Figures in parentheses indicate the percentage to total)

Table 8: Agency wise cost of marketing. (Rs. /kg)

Sr.no	Particulars	Channels			
		I	II	III	IV
1	The cost incurred by the grower	00.00 (00.00)	00.20 (01.18)	14.20 (85.02)	00.00 (00.00)
2	Cost incurred by PHC	14.16 (84.99)	00.00 (00.00)	00.00 (00.00)	04.26 (25.26)
3	The cost incurred by village trader	00.00 (00.00)	14.16 (83.98)	00.00 (00.00)	10.10 (59.90)
4	The cost incurred by a commission agent	01.00 (06.00)	01.00 (05.93)	01.00 (05.98)	01.00 (05.93)
5	The cost incurred by retailer	01.50 (09.00)	01.50 (08.89)	01.50 (08.98)	01.50 (8.89)
	Total	16.66 (100)	16.86 (100)	16.70 (100)	16.86 (100)

(Figures in parentheses indicate the percentage to total)

Table 8 revealed that the cost was maximum in Channel-II (16.86) and Channel-IV (16.86) Followed by Channel I (16.66) and III (16.7).

The cost incurred by the retailer and commission agent in all the channels was the same Rs1.50/kg and 1.0 Rs. /Kg respectively. The cost incurred by the grower is Rs. 0.20 in Channel – II and Rs. 14.20 in Channel- III. The costs incurred by the post-harvest contractor in Channel I and Channel IV was Rs 14.16 and Rs. 4.26 respectively. The cost incurred by the village trader was Rs.14.16 in Channel- II and Rs.10.10 In channel IV.

Based on the per kg cost of marketing incurred on various marketing channels of trade, it can be concluded that Channel-III (16.2) was the more efficient one and Channel-II (16.86) and Channel-IV (16.86) was the least efficient among the channels of jamun trade in the present only.

It is observed from Table 9 that in channel – I per kg. the price paid by the consumer was Rs. 150, out of which the net price realized by the producer was Rs. 50. In Channel -II the per kg., price paid by the consumer was Rs.150, out of which the net price received by producer Rs.60. In the channel cost incurred by the grower, village trader, commission agent and retailer was Rs. 0.20, Rs.14.16, Rs.1.0, Rs.1.5 respectively and the gross market margin of the commission agent was Rs.19 and the gross market margin of village trader and the retailer was Rs25.84 and Rs28.50 respectively. In Channel – III kg gross price received by the growers was Rs. 85.8. In Channel III the jamun grower incurred Rs 14.2/kg. as marketing cost. The net price received by the jamun grower was Rs.100/kg. The gross margin of commission agents and retailers was the same in all four channels. Rs. 19 and Rs.28.50 respectively. The Gross margin of village traders was Rs. 25.84 in Channel- II and Rs. 29.9 in Channel -IV. The cost incurred by the pre-harvest contractor was Rs.14.16 in Channel I and Rs. 4.26 in Channel -IV. The gross margin of the pre-harvest contractor was 35.84 in Channel I and Rs5.44 in Channel IV. They revealed that per kg price received by the jamun growers was highest in Channel- III Rs.100 followed by Channel -II 60 and in Channel- I and IV Rs 50.

The price spread is the difference between the price paid by the consumer and the price received by the producer for an equivalent quantity of farm produce. Price spread consists of the marketing margin and marketing cost of the intermediaries, which ultimately determine the overall effectiveness of the market system. Which will help in studying the efficiency of the marketing system

It was revealed from Table 8 that the per price paid by the consumer in the market is the same Rs.150 irrespective of the marketing channels, but the variation was seen in the price received by jamun growers in different channels. This was because of variations in Market margins and the cost of marketing in different channels.

Table 9: Marketing cost, market margin and price spread in different channels of marketing of jamun (Rs. /kg)

Sr. No	Particulars	Channels			
		I	II	III	IV
1	Net price received by the grower	50.0 (33.3)	60 (40)	100 (66.6)	50.0 (33.3)
	Cost incurred by grower	00 (00)	0.20 (0.13)	14.2 (9.46)	00 (00)
	Net price received by grower	50.0 (33.3)	59.8 (39.86)	85.8 (57.2)	50.0 (33.3)
2	**Pre-Harvest Contractor**				
	Price paid	50.0 (33.3)	00 (00)	00 (00)	50.0 (33.3)
	Cost incurred	14.16 (9.44)	00 (00)	00 (00)	4.26 (2.84)
	Price received	100 (66.66)	00 (00)	00 (00)	60 (40)
	Market margin	35.84 (23.90)	00 (00)	00 (00)	5.44 (3.60)
3	**Village Trader**				
	Price paid	00 (00)	60 (40)	00 (00)	60 (40)
	Cost incurred	00 (00)0	14.16 (9.44)	00 (00)	10.1 (6.7)
	Price received	00 (00)	100 (66.66)	00 (00)	100 (66.6)
	Market margin	00 (00)	25.84 (17.2)	00 (00)	29.9 (19.9)
4	**Commission agent**				
	Price paid	100 (66.6)	100 (66.6)	100 (66.6)	100 (66.6)
	Cost incurred	1.0 (0.6)	1.0 (0.6)	1.0 (0.6)	1.0 (0.6)
	Price received	120 (80.0)	120 (80.0)	120 (80.0)	120 (80.0)
	Market margin	19.0 (12.6)	19.0 (12.6)	19.0 (12.6)	19.0 (12.6)
5	**Retailer**				
	Price paid	120 (80.0)	120 (80.0)	120 (80.0)	120 (80.0)
	Cost incurred	1.5 (1.0)	1.5 (1.0)	1.5 (1.0)	1.5 (1.0)
	Price received	150 (100)	150 (100)	150 (100)	150 (100)
	Market margin	28.50 (19.00)	28.50 (19.00)	28.50 (19.00)	28.50 (19.00)
6	The price paid by the consumer	150 (100)	150 (100)	150 (100)	150 (100)

(Figures in parentheses indicate the percentage to total)

Table 10: Per kg price spread in the marketing of jamun (Rs/kg)

Sr. No	Particulars	Channels			
		I	II	III	IV
1	Net price received by grower	50.00 (33.3)	59.80 (39.8)	85.80 (57.2)	50.00 (33.3)
2	Net margin of PHC	35.84 (23.89)	00.00 (00.00)	00.00 (00.00)	05.44 (3.62)
3	Net margin of village trader	00.00 (00.00)	25.84 (17.22)	00.00 (00.00)	29.90 (19.93)
4	Net margin of commission agent	19.00 (12.66)	19.00 (12.66)	19.00 (12.66)	19.00 (12.66)
5	Net margin of retailer	28.50 (19.00)	28.50 (19.00)	28.50 (19.00)	28.50 (19.00)
6	Total market cost	16.66 (11.10)	16.86 (11.24)	16.70 (11.13)	16.86 (11.24)
7	Total Marketing margin	83.34 (55.56)	73.34 (48.89)	47.50 (31.66)	82.84 (55.22)
8	Consumers price	150 (100)	150 (100)	150 (100)	150 (100)

(Figures in parentheses indicate the percentage to total)

Share of producer in consumer's price

The producer share in the consumer rupee was the highest in Chanel- III (57.2%) followed by Channel-II (39.8%), Channel-I and IV (33.3%). The producer's share in consumer rupee in Channel-I and IV was the lowest because of producer directly sold their trees to pre- harvest contractors, who absorbed the maximum share.e.23.89 percent in Channel-I- I of the consumer's price. The producer's share in the consumer rupee was highest in Channel -III because jamun growers directly sold their produce to commission agents of the market. This presents that, selling jamun fruit directly to commission agents/ wholesalers in the wholesale market is advantageous.

Share of pre-harvest contractor in consumer's price

The PHCs were involved only in Channel- I and Channel- IV. The net share of preharvest contractors was Rs 35.84 (23.89%) in Channel- I and Rs 5.44 (3.62%) in Channel -IV.

Share of village trader in consumer's price

The net margin of village trader estimated as Rs 25.84(17.22%) in channel -II and Rs 29.90(19.93%) in Channel – IV

Share of commission agent/wholesaler in consumer price

The net share of the commission agent was Rs. 19 (12.66%) in all the four channels.

Share of retailers in consumer's price

The net share of retailers in consumed rupee was Rs. 28.50 (19%) in all the channels.

Table 11: Spread of consumer's price in percentage term (Rs/ kg)

Sr. No	Particulars	Channels			
		I	II	III	IV
1	Net price received by the grower	50.00 (33.33)	59.80 (39.86)	85.80 (57.2)	50.00 (33.33)
2	Total market cost	16.66 (11.10)	16.86 (11.24)	16.70 (11.13)	16.86 (11.24)
3	Total Marketing margin	83.34 (55.56)	73.34 (48.89)	47.5 (31.66)	82.84 (55.22)
	Consumer price	150 (100)	150 (100)	150 (100)	150 (100)

(Figures in parentheses indicate the percentage to total)

The price spread by consumers in the market and the price received by the consumer in different channels in terms of percentage.

Price spread gives knowledge regarding the difference between the price paid by the consumer for the commodity and the accrual amount gained by the farmer. It is observed from Table 11 that, price spread of different marketing channels, the maximum share of consumers' price was grasped by different intermediaries as market margin. This proportion was ranged between Rs.31.66 in Channel-III and Rs.55.56 percent in Channel-I. The share of marketing cost in each marketing channel was more or less the same. It ranged between Rs. 16.66 percent in Channel-I and Rs.16.86 in Channel II & III. The producer share in Channel-I and Channel IV was low at 33.33% and highest in Channel III57.2% and 39.86 % in Channel-II

Marketing efficiency

There are three main approaches for measuring marketing efficiency, they are

1. Conventional approach
2. Shephard's method
3. Acharya's method

Out of these three, Acharya's method for measuring marketing efficiency is given below

Table 12.

Table 12: Marketing efficiency of identified channels.

Sr. No	Particulars	Channels			
		I	II	III	IV
1	Net price received by the grower	50.00	59.80	85.80	50.00
2	Total market cost	16.66	16.86	16.70	16.86
3	Total Marketing margin	83.34	73.34	47.50	82.84
	Marketing efficiency	0.50	0.60	1.30	0.50

It is revealed from Table 12 that, the marketing efficiency was much higher in Channel-III 1.30 than that of Channel- II 0.60, Channel-I and Channel-IV marketing efficiency was 0.50 each respectively. The higher market margin in Channel- I resulted in poor efficiency of these channels. Thus, the analysis indicated that marketing of jamun directly by jamun growers through commission agents in the market was most effective in the study area. Joshi *et al.* (2007) [3] observed similar results in Sindhudurg district of Maharashtra.

Conclusion

Marketing practices like removing of trash, sorting and packing were followed by every jamun grower. More than 90 percent of jamun fruits were sold in the market which indicates a high marketable surplus. Through channel III growers receive the highest price for the jamun by selling to a commission agent directly. But the less quantity of jamun sold by this channel. Maximum farmers were using Channel -II for selling the Jamun. The highest marketing costs were found in Channel-II and Channel-IV, In Channel- IV their involvement of intermediaries was greater. Share of producers in consumer rupees was highest in Channel-III (66.6%), lowest in Channel-I (33.3%), Channel- IV (33.3%) respectively. Total market margin was highest in Channel – I Rs.83.34(55.56%), and lowest in Channel -III Rs. 47.50 (31.66%). The market efficiency was greater in Channel- III 1.30 and lower in Channel I (0.50) and Channel IV (0.50).

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