



Marketing of sweet jelly seeds of palmyra fruit: A study covering the tribal region of South Gujarat, India

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Abstract

Palmyra is a naturally occurring palm in Gujarat's southern region, spread randomly on all soil and land types. The major produce utilized from palmyra palm for livelihood by the tribal communities, contributing considerably to their income, is through sales of the immature soft jelly seed nuts of the fruit called "galeli". The present investigation was carried out to study the marketing cost, margin, and price spread in *galeli* marketing. Primary data for the period collected from 2015-16 to 2017-18, were pooled from 50 palmyra palm growers selected randomly, representing five tribal villages of Mahua taluka of Surat district in the South Gujarat region. Two marketing channels viz., Channel-I: producer-consumer and Channel-II: producer - retailer - consumer were observed, and the marketing cost, incurred on *galeli* marketing in these channels were worked out, which was ₹51.64 and ₹ 33.94 per hundred *galeli*, respectively. The highest producer's share in consumer's rupee was worked out in Channel-I. The study showed that the major constraint faced by 78 per cent of the palmyra palm growers in the marketing of *galeli* was the poor functioning of the climber equipment and non-remunerative prices for *galeli* in the local market.

Keywords: Cost, *galeli* price spread, margin, marketing, palmyra palm

Introduction

The palmyra palm, belonging to Arecaceae, is botanically known as *Borassus flabellifer* L. The centre of origin is the tropical region of Africa and Asia. This palm is found extensively in the southern states of India in the semi-arid tropical areas. The major states where palmyra palm are found are Tamil Nadu, Kerala, Andhra Pradesh, Odisha, West Bengal, Karnataka and Maharashtra. It is known by different names in different states like *taad*, *nungu*, *talam*, *fan palm*, *toddy palm*, *tadi*, *kerigi*, *tala palm* etc. Like coconut palm, right from the fruit to the root, every part of palmyra palm has economic value, and hence, the palm is known as "Kalpavriksha" in the Indian mythology (Anonymous, 2020). Different parts of the palm are used as food, wood, shelter and a source of toddy.

The sap collected from the top shoot of the tree has a very sweet taste. This sap, popularly known as *neera* in tropical parts of India, is used as a soft

natural drink, particularly in the summer season. When this sap gets fermented, it becomes sour, known as "tadi" (toddy). *Tadi* is consumed in the coastal part of Maharashtra as a raw alcoholic beverage (Jana and Jana, 2017). The palm gives fruits, which look like coconut, of 10 to 18 cm diameter. The fruits in its early stage, bears three to four soft jelly seeds, sweet and juicy and tastes similar to coconut water. These jelly-like seeds sold in the market, are rich in vitamin A and C (FAO, 2020; Krishnaveni *et al.*, 2020). Various other by-products like palm sugar and *gur* (molasses) are also prepared from the juice extracted from the tree trunk. Sugar obtained from palm fruit is healthy and more ecologically friendly (Veilmuthu, 2016). However, the commercialization of these palm products is still lacking.

In the southern region of Gujarat state, the plantation of palmyra palm is natural and found randomly on the uncultivated land, fallow land, and

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cultivated area. The major produce obtained and utilized for marketing from palmyra palm are the immature soft jelly seed nuts of the palmyra fruit called “*galeli*” and “*neera*”. This palm is part of the life of tribal people of Gujarat from ancient period and is known as the *taad* tree in South Gujarat. The tribal farmers in this region utilize the natural plantations of palmyra palm for *galeli* marketing, while *neera* is extracted from the palm owned by the *Mandali*, *i.e.*, the cooperative society. The *galeli* has a huge demand during the summer season and hence are harvested twice during the months of November-December and April-May. Harvesting and selling of *galeli* have contributed to considerable to the income and employment of tribal people of the South Gujarat region. However, considering its multiple uses and as a good source of food, it remains underutilized and hence needs more research to improve the economic potential of this crop. With this background the present investigation was conducted with the following objectives: to study the production and disposal pattern of *galeli*, to identify channels in the marketing of *galeli*, to work out marketing cost and price spread in *galeli* marketing and to study the constraints faced by palmyra palm growers.

Materials and methods

Mahua taluka from the tribal area of the Surat district of the South Gujarat region was selected for this study based on the high density of plantations of palmyra palm. About 50 tribal farmers, having palmyra palms and who sell of *galeli*, were selected randomly from five different villages of Mahua taluka. The primary data related to marketing *galeli* was collected with the help of a structured questionnaire by personal interview method for

2015-16, 2016-17 and 2017-18. Simple statistical tools were used for analysis purpose.

The total marketing cost incurred for *galeli* marketing was worked out as follows.

$$C = CF + Cm_1 + Cm_2 + Cm_3 + \dots + Cm_n$$

where C = Total cost of marketing, CF = Cost borne by the palmyra palm grower in the marketing of *galeli* and Cm_i = Cost incurred by the i^{th} middleman in the process of marketing

The margin of the middleman in *galeli* marketing was worked out by the formula:

$$\text{Margin of } i^{\text{th}} \text{ middleman} = PR_i - (Pp_i + Cm_i)$$

where, PR_i = Sale price of the i^{th} middlemen, Pp_i = Purchase price of the i^{th} middlemen; and Cm_i = Marketing cost incurred by i^{th} middlemen.

The price spread, *i.e.*, producers share in consumers rupee, was worked out by using the formula:

$$P_s = \frac{P_f}{P_c} \times 100$$

where, P_s = Producer's share in consumer's rupee, P_f = Price of the produce received by the farmer and P_c = Price of the produce paid by the consumer.

Results and discussion

Production and disposal pattern of *galeli*

The production and disposal pattern of *galeli* by the tribal farmers of the South Gujarat region is presented in Table 1. It was observed that the overall average *galeli* production was 1707 per palm. Out

Table 1. Production and disposal pattern of *galeli*

Particulars	Quantity per palm (Nos.)			
	2016	2017	2018	Overall
Total production	1729 (100)	1702 (100)	1690 (100)	1707 (100)
Consumption	53 (3)	67 (4)	45 (3)	55 (3)
Post-harvest loss	23 (1)	25 (1)	19 (1)	22 (1)
Quantity sold	1653 (96)	1610 (95)	1626 (96)	1630 (96)

Note: Figure in parenthesis indicate percentage to total production

Table 2. Marketing cost in *galeli* marketing in South Gujarat region (₹ per hundred *galeli*)

Sl. no.	Particulars	Channel I	Channel II
1.	Labour charges for cutting palmyra fruit	0.00	10.76
2.	Labour charges for cutting palmyra fruit and selling <i>galeli</i>	36.11	-
3.	Transportation charges incurred by producer	15.53	-
A.	Marketing cost incurred by producer	51.64	10.76
1.	Labour charges for selling <i>galeli</i>	-	17.35
2.	Transportation charges incurred by retailer	-	5.83
B.	Marketing cost incurred by retailer	-	23.18
C.	Total Marketing cost (A + B)	51.64	33.94

of total production, 96 per cent of *galeli* was sold while 3 per cent used for home consumption and one per cent accounted for post-harvest loss.

Marketing channels and cost in *galeli* marketing

Most of the tribal farmers harvest the palmyra fruits by themselves, while some of them employ hired climbers/labours for this purpose. After harvesting, to obtain *galeli*, cutting of the palmyra fruit was done by family members and hired labourers in some cases. On the same day, the *galeli* was sold to consumers directly in local markets of nearby towns and cities or to the retailers. In some cases, tribal farmers directly sold the palmyra fruit to the retailers. Singh *et al.* (2016) reported that the farmers either sold the majority of palm product through intermediaries or directly sell to consumers in the study region. Rupasena and Athula (1995) had made similar observation earlier in their study in Sri Lanka. In *galeli* marketing, two marketing channels were observed *viz.*, Channel I: producer - consumer and Channel-II: producer - retailer - the consumer.

The marketing cost incurred in these channels is presented in Table 2. It was observed that the total marketing cost in the marketing channels was worked out to ₹ 51.64 and ₹ 33.94 per hundred *galeli*. Labour charges for cutting palmyra fruit and selling *galeli* was the major cost item which accounts for ₹ 36.11, followed by transportation charges (₹ 15.53) in Channel-I. In Channel-II, the marketing cost incurred by the producer was ₹ 10.76 per hundred *galeli*, whereas the marketing cost incurred by the retailer was reported to ₹ 23.18 per hundred *galeli*.

Price spread in *galeli* marketing

The palmyra palm bear fruits two times during the year. Therefore, fruits are harvested twice, *viz.*, the first bearing during November-December and the second bearing during April-May. The production of fruits is less in the first bearing as compared to the second bearing. The prices of *galeli* were observed to be fluctuating between these two bearing periods. During the first bearing, *i.e.*, in

Table 3. Marketing margin and price spread in *galeli* marketing (₹ per hundred *galeli*)

Particulars	Channel I			Channel II		
	Nov-Dec	April	May	Nov-Dec	April	May
Price received by producer	780.26 (94)	519.52 (91)	360.00 (87)	500.05 (63)	365.98 (65)	233.75 (58)
Marketing cost incurred by producer	51.64 (6)	51.64 (9)	51.64 (13)	10.76 (1)	10.76 (2)	10.76 (3)
Purchase price of retailer	-	-	-	510.81 (64)	376.74 (67)	244.51 (61)
Marketing cost incurred by retailer	-	-	-	23.18 (3)	23.18 (4)	23.18 (6)
Margin of retailer	-	-	-	266.01 (33)	164.08 (29)	132.31 (33)
Price paid by consumer	831.90 (100)	571.16 (100)	411.64 (100)	800.00 (100)	564.00 (100)	400.00 (100)

Note: Figure in parenthesis indicate percentage of total price

Table 4. Constraints faced by palmyra palm growers in production and marketing of *galeli* (N= 50)

Sl. No	Constraints	No. of growers	Per cent
A.	Constraints in production of <i>galeli</i>		
1.	Premature fruit fall	26	52
2.	Tree climber equipment not suitable for climbing on palm	39	78
3.	Labours are not available readily	15	30
4.	High cost of labour during peak season	11	22
5.	Problem of flying insects like honey bees, flies while climbing on palm	24	48
6.	Lack of knowledge regarding other by-products from palm	14	28
B.	Constraints in marketing of <i>galeli</i>		
1.	Remunerative price not received during peak season	38	76
2.	specific market place not available for selling <i>galeli</i>	15	30
3.	Highly perishable and not stored for longer duration	22	44
4.	Lack of storage facility	4	8
5.	Could not sell at distant market	11	22

November-December and in the month of April of the second bearing, the higher prices were observed, while in May, the *galeli* fetched less price in the market.

The marketing margin of intermediary and price spread in *galeli* marketing is presented in Table 3. During the first bearing, *i.e.*, in November-December, the price of *galeli* in the market was ₹ 831.90 and ₹ 800.00 per hundred *galeli*, in Channel-I and Channel-II, respectively. Further, it was observed that during the second bearing, the prices obtained for *galeli* were in the range of ₹ 400.00 to ₹ 575.00 per hundred *galeli*. This implied that in comparison to the second bearing, higher prices were obtained during the first bearing for *galeli*. Table 3 depicts that during April, May and November-December, the price received by the producer was ₹ 519.52, ₹ 360.00 and ₹ 780.26, respectively, and price of *galeli* sold through Channel-I was higher as compared to Channel-II. The producer's share in consumer rupee was highest in Channel-I, which worked out to be 91 per cent, 88 per cent and 94 per cent during April, May and November-December, respectively whereas for Channel-II, it was 65 per cent, 58 per cent and 63 per cent, respectively, leading to the observation that selling of *galeli* through Channel-I was more remunerative than Channel-II. The retailer's share of marketing margin was found

highest in price paid by consumer, which was 29 per cent during April and 33 per cent during May and November-December, followed by the retailer's marketing cost.

Constraints in production and marketing of *galeli*

The constraints faced by the palmyra palm growers in the production and marketing of *galeli* are presented in Table 4. From the Table, it was observed that in the production of *galeli*, 78 per cent of respondents reported that the tree climber equipment was not suitable for climbing on the palm, whereas 52 per cent of growers reported that the premature fruit fall of palm was the major constraint. Difficulties faced by flying insects while climbing the palm was a problem faced by 48 per cent of the respondents. The other constraints faced by the respondents was that the labourers were not available readily, high cost of labour during peak season and lack of knowledge regarding other by-products from the palm.

In the marketing of *galeli*, 76 per cent of growers reported that no remunerative price was received for *galeli* during peak period, while according to 44 per cent of growers, *galeli* was highly perishable and could not be stored for a longer duration. The other constraints faced by growers in the marketing of *galeli* were lack of a

specific market place for selling of *galeli*, lack of storage facility in the region and no feasibility for selling in distant markets.

Conclusion

The study implies that selling of *galeli* through Channel-I was more remunerative than Channel-II. In the production of *galeli*, most respondents reported that the tree climber equipment was not suitable for climbing the palm, and premature fruit fall was another major constraint. In the marketing of *galeli*, poor remuneration in terms of price and perishability, of the produce were the major issues.

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