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Research Paper

Marketing analysis of organic and inorganic jaggery in Kolhapur district of Maharashtra

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ABSTRACT : The present study was a modest attempt to marketing analysis of organic and inorganic jaggeryproduction in the Kolhapur district of Maharashtra in 2011 -12. In marketing of jaggery, three marketing channels were identified in the study area. They were Channel-I: Producer→Primary Wholesaler → Retailer→ Consumer, Channel-II: Producer→ Commission agent→ Secondary Wholesaler→ Retailer→ Consumer and Channel-III: Producer→ Commission agent→ Distant Wholesaler→ Retailer→ Consumer. The quantity sold through the channel-III was more than channel-I and channel-II for both of category. It is also examine that the marketing cost in channel III (Rs. 516.32) was relatively high as compared to channel II (Rs.383.58) and channel I (Rs.330.48) for organic jaggery the same results were observed in case of inorganic jaggery *i.e.* marketing cost in channel III (Rs. 482.15) was relatively high as compared to channel II (Rs. 352.37) and channel I (Rs. 286.93). This may be due to relatively more transportation, commission, packaging, unloading and loading charges in case of Channel III than Channel II and Channel I. At overall level the price spread was Rs. 988.66 and 939.46 for organic and inorganic jaggery, respectively. The channel wise price paid was the highest as Rs. 1208.69 in channel-III, followed by Rs .981.48 in channel-II and Rs. 775.82 in channel-I in organic jaggery whereas for inorganic jaggery it was Rs. 1158.30 in channel-III, followed by Rs. 916.89 in channel-II and Rs. 743.18 in channel-I, respectively. At overall level marketing efficiency of organic and inorganic jaggery was 127.44 per cent and 128.51 per cent, respectively.

KEY WORDS : Marketing channel, Marketing cost, Price spread, Market margin, Marketing efficiency

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INTRODUCTION :

Agriculture is an important sector of Indian economy as it contributes about 14 per cent to the total GDP and provides employment to over 60 per cent of the population (2011-2012). Sugarcane is important cash as well as sugar crop in the world. In sugarcane cultivation Brazil ranks first, India ranks second and also is an important commercial crop of the country occupying around 4.94 million hectares of land with an annual cane production of around 339.16 million tones, with producers of white sugar, seed and feed and jaggery are 70.70 per cent, 11.90 per cent and 17.40 per cent, respectively (Anonymous, 2011). In Kolhapur district Karaveer, Shahuwadi, Panhalatahsils are the region where the farmers cultivate sugarcane for making jaggery. More than 75 per cent of the jaggery in Kolhapur district is produced in these three talukasonly.The production of

jaggery was 10,53,000 quintals during 2010-11. Arrivals of the jaggery in APMC for sale was 855041 and total turnover is Rs.215.66 crores during the same period. Reason behind the sugarcane growers preferring producing jaggery is, irregularity in the distribution of sugar cane purchase indent, delay in payments of sugar cane to the farmers, delay in unloading, lack of transportation facilities etc., are the major problems in marketing of sugar cane to the sugar mills.

In the context of increasing demand for organic jaggery both its domestic and international markets, concerted efforts are needed to encourage this cottage industry for the production of health ecofriendly-jaggery, because of its high medicinal and nutritive values and also for its exports. The current problem of indiscriminate usage of inorganic chemical for juice clarification and getting light colourjaggery is highly health hazard. The organic jaggery producers need suitable productive varieties which can fit well both for organic cultivation and organic jaggery processing (Guddadamath *et al*., 2014).

India is largest exporter of jaggery in the world. In India, only Uttar Pradesh and Maharashtra produce export quality jaggery because they have specialized centers for jaggery production.

MATERIALS AND METHODS :

Location of study :

The Kolhapur a district was purposively selected for present study due to the fact large number (702) of jaggery producing units are present in the area. From selected district the Karveer and Panhala tahsils were found promising in production of organic as well as inorganic jaggery, for this reason the study was undertaken in above mentioned tahsils of Kolhapur district. The large numbers of jaggery producing units were available in Kolhapur district this may be due to plenty of quality sugarcane required for jaggery production is available as raw material to jaggery producing units.

Selection of villages :

The village wise list of jaggery producer from each tahsils units was obtained from office of the "Shri Chhatrapati Shahu Sahakari Gur Kharedi Vikri Sangha, Kolhapur". Then villages were arranged in descending order according to number of jaggery producers in that villages. Two villages from each tahasil were selected randomly for the present study and the selected villages are Chikali, Vadanage, Porle and Kotoli.

Selection of jaggery producers:

From the list of jaggery producers, producers were classified in to two categories based on method of processing used for making the jaggery.

Organic jaggery:

Jaggery produced from sugarcane(Without chemical) without chemical other than phosphoric acid Bhendi powder and lime in its processing.

Inorganic jaggery:

Jaggery produced from sugarcane usingdifferent chemical powders in itsprocessing.

From every village eight jaggery producing units from each category were selected randomly. Thus, total sample size was 64 jaggery producers comprised of 32 jaggery producers from each category spread over 4 villages of the study area.

Sample design :

The sample design adopted for the investigation was two stage random sampling with sample village as a primary unit and jaggery producers as a secondary and ultimate unit of sampling.

Collection of data :

The primary information relating aspects like capital investments, raw material required, chemicals required and labour for the year 2011-12 was collected by survey method through personal interviews with the sample jaggery producers with the help of questionnaire specially designed for the purpose. As one of the objectives of the study was to estimate trends in arrivals and prices of jaggery for fulfilling the same, secondary data, were collected from Agriculture Produce Market Committee Kolhapur for ten years period from 2003-2012.

Method of analysis :

The analytical procedure followed to accomplish the objectives under the study is explained below. The data pertaining to marketing cost of jaggery and marketing systems were analyzed by tabular method with a view of studying the marketing costs, margins and marketing practices adopted by the jaggery producers.

Arrivals and prices:

Seasonal indices:

To examine the peak / slack period monthly seasonal indices were worked out by simple average method.

$$\text{Seasonal index} = \frac{\sum X_i}{\bar{x}} \times 100$$

whereas,

X_i = Average of n^{th} years for the i^{th} months

$\bar{X}$ = The mean of i^{th} months for n^{th} years.

$$\bar{x} = \frac{\sum_{i=1}^{12} X_i}{12}$$

The irregular fluctuations were estimated by averaging the figures of data.

Compound growth rate:

The time series data on monthly arrivals and prices of jaggery was obtained from official records of Agricultural Produce Marketing Committee Kolhapur for 10 year period from 2003-2012.

The trend of arrivals and prices was examined with the help of compound growth rate by using exponential equation.

Ya = abt

Yp = abt

where,

Ya : Monthly arrivals (Qt.)

Yp : Monthly prices (Rs.)

a : Constant

b : Trend co-efficient

t : Time period (year)

The compound growth rates were estimated by using the formula:

r = (Antilog b-1)*100

RESULTS AND DATA ANALYSIS :

In consonance with the objectives of the study, the data collected from various sources were subjected to various statistical tools and techniques to draw meaningful conclusions. The major findings of the study are presented in this chapter as below.

Marketing practices, marketing cost, margin and price spread in jaggery marketing:

The magnitude of marketing margins relative to the price of the product indicates the efficiency of the marketing system. The knowledge of marketing cost helps to identify the reasons for high marketing costs and the possible ways of reducing them. The price paid indicates nothing but producers share in consumer rupee which is important for deciding which marketing channel to be selected for selling of their produce (Archna *et al.*, 1995; Imandi and Yoga, 2011; Lal, 1980 and Nawadkar *et al.*, 2002). In the study area following marketing channels were identified in marketing of jaggery, they are:

Channel-I: Producer→Commission agent→Primary Wholesaler → Retailer→ Consumer,

Channel-II: Producer → Commission agent → Secondary Wholesaler → Retailer→ Consumer

Channel-III:Producer → Commission agent → Distant Wholesaler → Retailer→ Consumer.

Average production, retention and marketed surplus of jaggery:

The average jaggery production, retention, marketed surplus and quantity sold through different marketing channels is presented in Table 1. It was clear from the that the figure of jaggery production was found different for organic and inorganic type according to duration of production, for organic and inorganic jaggery it was 249.39 quintals and 1147.48 quintals, respectively (Kallappa, 2011; Lohar and Babar, 2003 and Maheswarappa *et al.*, 1998).

It was also observed that the quantity of organic type of jaggery retained for home consumption, given to labour, given to different workers, given to relatives and waste was 1.17, 0.37, 0.06, 0.32 and 0.04 quintals and for inorganic jaggery figure for the same were 1.05, 1.06, 0.43, 0.50 and 0.13 quintals, respectively. Quantity of organic jaggery sold through channel-I, channel-II and channel-III was 31.52, 47.72 and 168.20 quintals and for inorganic jaggery it was 89.80, 99.28 and 995.2 quintals, respectively.

It was also observed from the result that the highest quantity of jaggery was marketed through channel-III in both type of jaggery. The quantity distributed among the labour was more in case of inorganic jaggery than organic jaggery because of more labour use in production of inorganic jaggery than organic jaggery. The important aspects of jaggery marketing Jaggery moulds or lumps

are brought to the market by the jaggery producers or farmers. Middle men or commission agents rarely visit the villages to buy jaggery. They are allotted shops and godowns by the market committee on rental basis.

Grading:

There was no grading system and producers didn't feel the need to grade their jaggery after production. It was immediately sent to the market for sale through commission agents. There was a common practice in Kolhapur market that commission agents or traders grade the products. Grading was done on the basis of quality, colour, texture, taste, hardness of jaggery lumps etc. Grading was not found necessary and was practiced by the producers in Kolhapur market areas.

Sale of jaggery:

Each trader or merchant inspect personally participate in auction and bids the price based on his own perception regarding quality factors *viz.*, colour, uniformity, taste, texture, size, season and flavour, which were hypothesized to be influential in determining the prices received by jaggery producers.

Weighing:

The lumps or blocks used for different sizes of jaggery, its weight nearly fixed according to their size but it confirm after auction by taking its weight by using electronic weighing machine.

Packaging:

Packing of jaggery is not actually done by the jaggery producers. It is only covered by gunny cloth or paper and lumps are brought to the market place from the farm of jaggery making unit. Actual packaging of jaggery takes place only after it is sold to the trader. Hamals (unskilled labour) are involved in packaging of jaggery lumps. Also women workers are engaged in packaging. In Kolhapur market, jaggery was packed using Hessian cloth, butter paper or polythene to wrap bucket shaped jaggery lumps of 30, 20, 10, 5, 2, 1 and 0.5 kg. Modak shaped jaggery was covered in butter paper or white paper with attractive design and details printed on it (Mandal et al., 2006 and Singh, 1998).

Storage:

The production of jaggery is seasonal in nature and its consumption or demand is throughout the year. Therefore, jaggery has to be stored appropriately during the year. In Kolhapur, jaggery was stored as per the modern methods by the traders and organized agencies. Hessian cloth and polythene sheets were used for bucket shaped jaggery lumps which were sealed or stitched by the skilled labour. Also printed earthen pots and jaggery drying cum storage bins were used which was proved to be more useful than unprinted earthen pots and polythene bags of varying quality. Thus, jaggery stored by this method had less reduction in sucrose and less darkening of colour (Roy, 1951).

Transportation:

The vehicles used for jaggery transport in Kolhapur were tractors, truck, Tempo were the major means of transport of jaggery. Transportation charges were mostly

Table 1: Disposable pattern of organic and inorganic jaggery

Sr. No.	Particulars	Organic jaggery Weight (quintals)	Inorganic jaggery Weight (quintals)
1.	Total jaggery production	249.39 (100.00)	1147.48 (100.000
2.	Home consumption	1.17 (0.47)	1.05 (0.09)
3.	Given to labour	0.37 (0.17)	1.06 (0.09)
4.	Given to different workers	0.06 (0.02)	0.43 (0.04)
5.	Given to relatives	0.32 (0.13)	0.50 (0.04)
6.	Waste	0.04 (0.02)	0.13 (0.01)
7.	Total retention	1.95 (0.78)	3.17 (0.28)
8.	Quantity sold through channel-I (Producer primary wholesaler retailer-consumer)	31.52 (12.64)	89.80 (7.83)
9.	Quantity sold through channel-II (Producer-secondary wholesaler-retailer-consumer)	47.72 (19.13)	99.28 (8.65)
10.	Quantity sold through channel-III (Producer-distant wholesaler-retailer-consumer)	168.20 (67.45)	995.24 (83.25)
11.	Total marketed surplus	247.44 (99.22)	1144.31 (99.72)

(Figures in the parentheses are percentages to the total)

dependent on the distance from the village to the market yard also it depends on marketing channel.

Per quintal cost of marketing of organic and inorganic jaggery :

The marketing cost constitutes the expenses on grading, packing, transportation, hamali, commission charges, and other charges. The information on these items estimated and same is presented in Table 2.

It is apparent from the table that at the overall level, the average per quintal cost of marketing worked out to Rs. 379.47 for organic and 373.82 for inorganic jaggery. The major items of the cost of marketing for organic type of jaggery were, transportation cost, commission charges, packaging charges and which constituted 40.03, 23.48 and 13.67 per cent of the total cost. For inorganic type of jaggery major items of the cost of marketing were transportation cost, commission charges and packaging charges which shared about 44.22, 19.94 and 11.31 per cent of the total cost. Looking to the marketing channel wise results, it was observed that the marketing cost in channel III (Rs.516.32) was relatively high as compared to channel II (Rs.383.58) and channel I (Rs.330.48) for organic type of jaggery. The same trend was observed in case of inorganic type of jaggery *i.e.* marketing cost in channel III (Rs.482.15) was relatively high as compared to channel II (Rs.352.57) and channel I (Rs. 286.93). This may be due to relatively more transportation, commission, packaging, unloading and loading charges in case of Channel III than Channel II and Channel I.

The commission charges for organic jaggery were high due to more price in the market than inorganic jaggery. Also cost of marketing more in case of channel III due to distant place of marketing for both the type of jaggery.

Price spread in marketing of organic and inorganic jaggery:

Price spread refers to the difference between the price paid by the consumer and price received by the producer for farm produce. Price spread consists of marketing cost and margins of the intermediaries which ultimately determines the overall efficiency of marketing system.

Per quintal marketing cost, marketing margin and price spread in organic and inorganic jaggery marketing with respect to different marketing channels were calculated and are presented in Table 3. The price spread at overall level Rs. 988.66 and Rs. 939.46 for organic and inorganic type of jaggery, respectively. The channel wise price paid in case of organic jaggery was the highest as Rs. 1208.69 in channel-III, followed by Rs. 981.48 in

Table 2 : Cost of marketing of organic and inorganic jaggery under different marketing channels **(Rs./qtl)**

Sr. No.	Particulars	Marketing channel for organic jaggery				Marketing channel for inorganic jaggery			
		I	II	III	Overall	I	II	III	Overall
1.	Packaging	57.08 (17.27)	55.37 (14.44)	55.69 (10.69)	56.05 (13.67)	40.52 (14.12)	43.18 (12.26)	43.18 (8.96)	42.29 (11.31)
2.	Weighing	15.37 (4.65)	14.44 (3.77)	13.78 (2.67)	14.53 (3.54)	14.66 (5.11)	14.44 (4.10)	13.78 (2.86)	14.30 (3.82)
3.	Loading	22.83 (6.91)	22.28 (5.81)	22.09 (4.28)	22.40 (5.46)	22.12 (7.71)	21.98 (6.24)	22.38 (4.64)	22.16 (5.93)
4.	Unloading	25.03 (7.58)	24.35 (6.35)	24.41 (4.73)	24.60 (6.00)	24.24 (8.45)	24.53 (6.96)	25.15 (5.22)	24.64 (6.59)
5.	Transportation	85.85 (25.98)	140.06 (36.51)	266.67 (51.65)	164.19 (40.03)	86.65 (30.20)	140.71 (39.93)	268.56 (55.70)	165.31 (44.22)
6.	Market fee	23.62 (7.15)	23.64 (6.16)	27.56 (5.34)	24.94 (6.08)	22.12 (7.71)	24.64 (6.99)	24.64 (5.11)	23.80 (6.37)
7.	Commission charges	95.42 (28.87)	96.13 (25.06)	97.31 (18.85)	96.29 (23.48)	70.58 (24.60)	76.02 (21.57)	77.00 (15.97)	74.53 (19.94)
8.	Losses	5.27 (1.59)	7.30 (1.90)	8.80 (1.70)	7.12 (1.74)	6.03 (2.10)	6.86 (1.95)	7.44 (1.54)	6.78 (1.81)
	Total	330.48 (100.00)	383.58 (100.00)	516.32 (100.00)	410.13 (100.00)	286.93 (100.00)	352.37 (100.00)	482.15 (100.00)	373.82 (100.00)

(Figures in the parentheses are percentages to the total)

channel-II and Rs. 775.82 in channel-I. For inorganic jaggery, Rs. 1158.30 in channel-III, followed by Rs.916.89 in channel-II and Rs. 743.18 in channel-I, respectively. At overall level the marketing margin for both the type of jaggery was at par *i.e.* Rs. 578.54 and Rs. 565.64. At overall level marketing efficiency of organic and inorganic jaggery were 127.44 per cent and 128.51 per cent, respectively. The producers share in consumer's rupee was highest in channel I which was 82.14 per cent and 81.30 per cent for category I and category II, respectively. The marketing efficiency of organic and inorganic jaggery calculated which was more in channel-III than channel-I and channel-II, respectively. It implies that selling of jaggery to channel-III is more profitable to producers than other marketing channels.

Arrivals and prices of jaggery in Kolhapur market:

The details of annual arrivals and prices of jaggery in Kolhapur market during 2002-2012 is presented in Table 4. The arrival of jaggery was maximum *i.e.* 70242.67 quintals in the year 2010-11 and minimum *i.e.* 36591.69 quintals in the year 2002-2003. The price of jaggery per quintal was maximum Rs. 3301.25 and it was minimum *i.e.* Rs. 1124.86 per quintal in the year 2013 and 2002, respectively. The abrupt decrease in the prices of jaggery was discernible in the years 2006-07 and 2007-08 and it increased in the subsequent years.

Trends in arrivals and prices of jaggery :

The index number series for arrivals and prices of jaggery for the period 2002-03 to 2011-12 is presented in Table 5.

The index of arrival in the year 2002-03 (100.00) is considered as base year, which was increased to 172.22 in the year 2011-12. The indices of arrivals of jaggery did not show any regular trend but were characterized

Table 3 : Channel wise price spread, marketing margin and marketing efficiency of organic and inorganic jaggery **(Rs./qtl)**

Sr. No.	Particulars	Marketing channel for Organic jaggery				Marketing channel for Inorganic jaggery			
		I	II	III	Overall	I	II	III	Overall
1.	Net price received	3567.56	3598.78	3628.93	3598.42	3230.91	3289.61	3342.29	3287.60
	by producer	(82.14)	(78.58)	(75.02)	(78.45)	(81.30)	(78.20)	(74.26)	(77.78)
2.	Marketing margin	445.34	597.90	692.37	578.54	456.25	564.52	676.15	565.64
		(10.25)	(13.05)	(14.31)	(12.61)	(11.48)	(13.42)	(15.02)	(13.38)
3.	Marketing cost	330.48	383.58	516.32	410.13	286.93	352.37	482.15	373.82
		(7.61)	(8.37)	(10.67)	(8.94)	(7.22)	(8.38)	(10.71)	(8.84)
4.	Price spread	775.82	981.48	1208.69	988.66	743.18	916.89	1158.30	939.46
		(17.86)	(21.43)	(24.99)	(21.55)	(18.70)	(21.80)	(25.74)	(22.22)
5.	Price paid by	4343.38	4580.26	4837.62	4587.09	3974.09	4206.50	4500.59	4227.06
	consumer.	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)
6.	Marketing efficiency	121.75	127.27	133.31	127.44	123.00	127.87	134.66	128.51

(Figures in the parentheses are percentages to the total)

Table 4: Annual arrivals, prices and change in arrivals and prices of jaggery in Kolhapur market

Year	Annual arrival of jaggery (quintals)	Percentage change over previous year	Average price of jaggery (Rs./qtl)	Percentage change over previous year
2002-03	36591.69	-	1124.86	-
2003-04	38181.42	4.34	1531.25	36.13
2004-05	57504.58	50.61	1737.50	13.47
2005-06	57142.00	-0.63	1928.87	11.01
2006-07	55943.17	-2.10	1655.38	-14.18
2007-08	70068.08	25.25	1469.13	-11.25
2008-09	64749.92	-7.59	2450.11	66.77
2009-10	69832.5	7.85	3067.26	25.19
2010-11	70242.67	0.59	3152.82	2.79
2011-12	63017.83	-10.29	3301.25	4.71

by the random up and downswings. Also the price index of jaggery in the year 2002-03 (100.00) is considered as base year, which was increased to 293.48 in the year 2011-12.The abrupt increase in the price indices of jaggery was conspicuous during two years *viz*., 2008-09 and 2003-04 and considerable decline during the year 2006-07 and 2007-08.

It appears that there was cyclical up and downswing for arrivals and prices index.

Seasonal fluctuation in arrivals and prices of jaggery:

The seasonal indices of arrivals and prices of jaggery for APMC, Kolhapur market are depicted in Table 6.

From the table it is inferred that the higher indices of arrivals of jaggery were noticed during the month of November to March and highest in January *i.e.* 280.58,

Table 5: Indices of arrivals and prices of jaggery in Kolhapur market

Year	Arrival index of jaggery	Percentage change over previous year	Price index of jaggery	Percentage change over previous year
2002-03	100.00	-	100.00	-
2003-04	104.34	4.34	136.13	36.13
2004-05	157.15	50.61	154.46	13.47
2005-06	156.16	-0.63	171.48	11.01
2006-07	152.88	-2.10	147.16	-14.18
2007-08	191.49	25.25	130.61	-11.25
2008-09	176.95	-7.59	217.81	66.77
2009-10	190.84	7.85	272.68	25.19
2010-11	191.96	0.59	280.29	2.79
2011-12	172.22	-10.29	293.48	4.71

Table 6: Seasonal indices of arrivals and prices of jaggery in Kolhapur market (2002 to 2011)

Sr. No.	Months	Seasonal indices	
		Arrivals	Prices
1.	October	42.04	105.59
2.	November	140.36	95.30
3.	December	262.86	92.60
4.	January	280.58	92.62
5.	February	252.16	95.45
6.	March	149.46	91.08
7.	April	16.64	92.34
8.	May	3.30	93.18
9.	June	0.36	110.70
10.	July	0.13	105.09
11.	August	0.39	129.26
12.	September	20.16	105.53

Table 7: Annual compound growth rates (ACGR) of arrivals and prices of jaggery

Sr. No.	Particulars	Constant (a)	Trend co-efficient (bi)	S E	ACGR (%)	r2	t cal. (bi/SE)
1.	Arrivals	39838.81	0.028	0.06	6.72 NS	0.68	0.03
2.	Prices	1098.51	0.047	0.07	11.65 NS	0.81	0.67

NS= Non-significant

while lowest in July 0.13. There was not much sale of jaggery in market from June to October. In the case of prices the higher indices were seen during June to October and highest in August *i.e.* 129.26, while lower during November to May and lowest in March *i.e.* 91.08.

It implies that arrival of jaggery was more in month of November to March because of peak period of jaggery production, less space for storage and some perishable nature of jaggery. The prices in month of Jully to August was more because of low arrival and more demand due to months of *Shravan* (Hindu calendar).

Compound growth rates in annual arrivals and prices of jaggery:

The compound growth rates of annual arrivals and annual prices of the jaggery were estimated by fitting exponential types of equation. The significance of the compound growth rates was examined with help of student "t" test. The results are presented in Table 7.

The price of jaggery increased by 11.65 per cent per annum while as the arrivals of the jaggery increased by 6.72 per cent per annum during the period under study. The magnitude of r2 indicate that the factor has significant input of growth rates in arrival and prices. But non-significant ACGR indicated that the increase in arrivals and prices were not constant for entire period under study. The regression co-efficient of arrivals of jaggery was positive but non-significant. Rao and Ravikumar (2005); Rohal *et al*. (1985); Shaikh (2013); Suryawanshi *et al.* (1994); Teggi *et al*. (1996) and Verma (1989) also worked on the related topic and the results found were more or less similar to the present investigation.

Conclusion:

The present investigation was intended to depict the picture of the Organic and Inorganic jaggery producer in Kolhapur districts, the prominent jaggery producing district of Maharashtra state. The enterprise has assumed a place of pride in the economy of the tract. In the light of the empirical evidence brought out by the study, the following conclusions are drawn.

The highest quantity of jaggery was marketed through channel-III in both type of jaggery, also quantity retained for home consumption of organic jaggery was more than inorganic jaggery.At the overall level, per quintal marketing cost of jaggery for category I and category II was worked out to Rs. 410.13 and Rs. 373.82, respectively. The major items of this cost were transportation charges, loading charges, unloading charges and cost of packing. The producers share in consumer rupee was 75.45 per cent and 77.78 per cent for category I and category II, respectively. The marketing efficiency of organic and inorganic jaggery was more in channel-III than channel-I and channel-II, respectively.

The seasonal indices of arrivals were highest for the month of January. Seasonal indices of prices were highest for the month of August.

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