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Economics and marketing of processing of rice bran oil

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Abstract

The study was conducted on “Economics and marketing of processing of rice bran oil” with the following objectives, viz. to study the marketing of rice bran oil. The present study was carried out in Gondia District. The single rice bran oil unit was selected for the study. In marketing of rice bran oil three channels was studied. The highest marketing cost was observed in channel III i.e. Rs. 33600 and highest total margin was observed in channel II i.e. Rs. 21600. The net price received by rice bran oil miller in channel I, channel II and channel III was Rs. 69189.86, Rs. 70550 and Rs. 69075 per ton respectively. The processor’s share in consumer’s rupee was highest in channel I i.e. 60.17 per cent. The marketing efficiency was highest in channel I i.e. 3.61 per cent by Shepherd’s approach, 2.51 per cent by Acharya and Agarwal’s approach and 1.75 per cent by conventional approach.

Keywords: Paddy/Rice, marketing efficiency, marketing channels

Introduction

Processing of agricultural product has assumed great importance now-a-days. Processing creates form utility in the agricultural products which help in fetching high prices. Some of the agricultural products need processing so as to convert them in edible form viz., Paddy, sugarcane, pulses and oilseed needs processing to make them suitable for final consumption.

Rice bran is used for the enrichment of foods, due to its high dietary fibre content. Since the middle of the 1970s, the role of dietary fibre in health and nutrition has stimulated a wide range of research activities which caught public attention. In view of the therapeutic potential of dietary fibre, more fibre incorporated food products are being developed. Addition of dietary fibre to a wide range of products will contribute to the development of value-added foods or functional foods that currently are in high demand (Hu et al., 2009) [11].

The United States Department of Agriculture (USDA) estimates that the World Rice Production 2022-23 will be 514.76 million metric tons, around 0.59 million metric tons less than previous month projection. Rice Production in 2021-2022 was 513.56 million tons. This year 514.76 estimated million tons could represent an increase of 1.20 million tons or a 0.23% in rice production around the globe. (ers.usda.gov).

India is the world’s second largest producer of rice and the largest exporter of rice in world. India’s total rice production during 2022-23 crop year is estimated at a record 130.29 million tons as against 18.53 million tons in the previous year. Production increased from 53.6 million tons in 1980 to 120 million tons in 2022-2023. (www.statista.com)

In India paddy occupies the first place both in area and production. Apart from rice milling, processing of rice bran for oil extraction is also an important agro processing activity for value addition, income and employment generation.

Maharashtra is a highly industrialized state of India, agriculture continues to be the main occupation of the state. In Maharashtra rice is the second important crop of the people, which is grown over an area of 14.99 lakh hectares with an annual rough rice production of 32.37 lakh tons. The average productivity of the state is 2.01t/ha. Maharashtra rank 13th place in rice production in country (M.S. Research gate).

Materials and Methods

The study was conducted in Gondia District at Shah Solvex Plant, Rice bran oil unit Adashi Ta. Dis. Gondia. The data was collected for FY 2022-2023 i.e. from March 2022 to April 2023 from the rice bran oil unit. This unit remains closed for two months in a year due to off season. Data were collected through personal interview method. Primary data were collected from rice bran oil unit (Processor), Refiners, Wholesalers and Retailers. Keeping in view objectives of the study, appropriate statistical methods were used to analyse the data.

Price spread analysis was used to determine the Processor's share in consumer's rupee.

The processor's share in consumer rupee is expressed as

$$= \frac{\text{Net price received by producer}}{\text{Price paid by consumer}} \times 100$$

The marketing efficiency of different channels for rice bran oil was estimated by Shepherd's method, Acharya and Agarwal's method, Conventional method.

The marketing efficiency is measured with the help of following formula given by Shepherd.

$$ME = \frac{V}{I} - 1$$

Where,

ME = Marketing efficiency

V = Consumer's price

I = Total marketing cost

The marketing efficiency was worked out by using modified method suggested by Acharya and Agarwal's (1999) [12].

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

Where,

MME= Modified measures of marketing efficiency

RP=Price paid by consumers or retailers sale price

MC= Total marketing cost

MM= Net marketing margin

Conventional method

Conceptually, efficiency of any activity or process is defined as the ratio of output to input. If 'O' and 'I' are output and input respectively of the marketing system and E is the index of marketing efficiency, then.

$$E = \frac{O}{I} \times 100$$

Results and Discussion

Marketing channels are the routes through which produce moves from producers to final consumer. The marketing channels were identified in the marketing of rice bran oil based on diversified value addition to paddy before it reached the final consumer. There are three marketing channels mainly identified in the study area.

- **Channel I:** Rice oil miller → Refiner → Wholesaler → Retailer → Consumer
- **Channel II:** Rice oil miller → Refiner → Primary wholesaler → Secondary wholesaler → Retailer → Consumer
- **Channel III:** Rice oil miller → Wholesaler → Retailer → Consumer

The cost of marketing of rice bran oil was estimated and presented in Table 1 and 2.

Table 1: Marketing cost of producer (Husk) (Rs/ton)

Sr. No.	Particulars	Channel I	Channel II	Channel III
1.	Marketing cost of Producer (Husk)			
a.	Packing charges	500	1500	1000
b.	Hamali charges	1000	1500	1000
c.	Transportation charges	1500	1500	1500
d.	Miscellaneous	1000	1000	1500
	Total marketing cost of producer	4000	5500	5000
	Selling price of Producer	48000	49500	50500

It is observed from Table 1 that, the rice bran oil miller purchased husk from the producer at Rs. 48000, Rs. 49500

and Rs. 50500 per ton in channel I, channel II and channel III respectively for the processing of rice bran oil.

Table 2: Cost of Marketing of Rice bran oil (Rs/ton)

Sr. No.	Particulars	Channel I	Channel II	Channel III
1	Marketing cost of Rice bran oil miller			
a	Packing charges	100	200	3500
b	Hamali charges	100	250	1500
c	Transportation charges	2000	1500	4500
d	Cess fund	-	-	1925
e	Miscellaneous	-	-	2000
	Total marketing cost of rice bran oil miller	2200	1950	13425
	Selling price of Rice bran oil miller	71389.866	72500	82500
2	Marketing cost of Refiner			
a	Labour charges	1500	1500	-
b	Transportation charges	3500	2500	-
c	Miscellaneous	1000	1500	-
	Total marketing cost of Refiner	6000	5500	-
	Selling price of Refiner	85000	83500	-
	Market margin of Refiner	7610.134	5500	-
3	Marketing cost of Packer/Primary wholesaler			
a	Packing charges	-	4500	-

b	Transportation charges	-	1500	-
	Total marketing cost of Primary wholesaler	-	6000	-
	Selling price of Primary wholesaler	-	94000	-
	Market margin of Primary wholesaler	-	4500	-
4	Marketing cost of Secondary Wholesaler			
a	Packing charges	4250	-	4500
b	Labour charges	250	500	1500
c	Transportation cost	1000	1500	2500
d	Cess fund	4250	4700	4275
	Total marketing cost of Secondary Wholesaler	9750	6700	12775
	Selling price of Secondary Wholesaler	99500	104000	98000
	Market margin of Secondary Wholesaler	4750	3300	2725
5	Marketing cost of Retailer			
a	Labour charge	1000	500	1000
b	Miscellaneous charge	1000	1000	1500
c	Cess fund	4975	5200	4900
	Total marketing cost of Retailer	6975	6700	7400
	Selling price of Retailer	115000	119000	120000
	Marketing Margin of Retailer	8525	8300	14600
6	Total marketing cost	24925	26850	33600
7	Total market margin	20885.13	21600	17325

It is revealed from Table 2 that, out of three marketing channels, in channel I the total marketing cost incurred was Rs. 24925. In Channel II, the total cost of marketing was Rs. 26850. In channel III, the total marketing cost incurred was

Rs. 33600. From above discussion, it is concluded that, highest marketing cost was observed in channel III i.e. Rs. 33600 and highest total marketing margin was observed in channel II i.e. Rs. 21600.

Table 3: Channel wise price spread of Rice bran oil (Rs/ton)

Sr. No.	Particulars	Total cost		
		Channel I	Channel II	Channel III
1	Net price received by rice bran oil miller	69189.866 (60.17)	70550 (59.29)	69075 (57.56)
2	Total marketing cost incurred by Rice oil miller, Refiner, Wholesaler, Retailer	24925 (21.67)	26850 (22.56)	33600 (28.00)
3	Total market margin of Refiner, Wholesaler, Retailer	20885.13 (18.16)	21600 (18.15)	17325 (14.44)
4	Purchase price of consumer	115000 (100.00)	119000 (100.00)	120000 (100.00)
5	Processor's share in consumer's rupee (%)	60.17	59.29	57.56
6	Price Spread	45810.13	48450	50925
7	Marketing efficiency			
a.	Shepherd's approach	3.61	3.43	2.57
b.	Acharya and Agarwal's approach	2.51	2.46	2.36
c.	Conventional approach	1.75	1.73	1.11

The price spread analysis is done in each channel and presented in the Table 3. Out of the three marketing channels, it was observed from Table 3 that, the net price received by rice bran oil miller in channel I, channel II and channel III was Rs. 69189.86, Rs. 70550 and Rs. 69075 per ton respectively. It could be seen from Table 3 that, processor's share in consumer's rupee was highest in channel I i.e. 60.17 per cent followed by channel II was 59.29 per cent and channel III was 57.56 per cent, because in channel II there are large number of intermediaries. The total marketing cost was highest in channel III as compared to other channels. The total marketing margin was highest in channel II.

The marketing efficiency of channel I was 3.61 per cent, channel II was 3.43 per cent and channel III was 2.57 per cent by Shepherd's approach. The marketing efficiency of Rice bran oil, in channel I was 2.51 per cent, in channel II was 2.46 per cent and in channel III was 2.36 per cent by Acharya and Agarwal's approach. The marketing efficiency of Rice bran oil in channel I was 1.75 per cent, in channel II was 1.73 per cent and in channel III was 1.11 per cent by the Conventional approach. It revealed that channel III was more efficient due to less number of intermediaries.

Conclusion

In case of rice bran oil, processor's share in consumer's rupee

was highest in channel I (Rice oil miller → Refiner → Wholesaler → Retailer → Consumer) i.e. 60.17 per cent followed by channel II (Rice oil miller → Refiner → Primary Wholesaler → Secondary Wholesaler → Retailer → Consumer) i.e. 59.29 per cent and in channel III (Rice oil miller → Wholesaler → Retailer → Consumer) i.e. 57.56 per cent. From this, it was concluded that channel I was most profitable than channel II and III. The marketing efficiency of rice bran oil in channel I, channel II and channel III was 3.61, 3.43 and 2.57 per cent respectively by Shepherd's approach. By Acharya and Agarwal's approach it was 2.51, 2.46 and 2.37 per cent respectively. By conventional approach it was 1.75, 1.73 and 1.11 per cent respectively. This indicated that between the three channels, the channel III was more efficient due to less number of intermediaries.

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