MARKETING OF FOX NUT IN MADHUBANI DISTRICT OF BIHAR

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ABSTRACT: Fox nut has tremendous opportunities in local as well as the global market due to increased demand of nutrient-rich food across the globe. It is a major component of integrated farming as it can be cultivated with rice, water chestnut as well as fisheries. It provides livelihood tosmall and landless farmers of Bihar and Eastern India as the agro-climatic region of Bihar andEastern India is most suitable for its cultivation due to the fertile land of Indo-Gangetic plains and abundance of pure water. The Present study entitled **"Marketing of Fox Nut in Madhubani District of Bihar"** It was observed during the present investigation thatthere are two marketing channels involved in marketing of Fox nut, (Channel-I – Producer-Wholesaler-Consumer), (Channel-II- Producer-Wholesaler- Retailer-Consumer).The majorly preferred marketing channel by respondents in the study area for buying of Fox nut in study area is Channel-II. In channel I, the producer receives a net price of Rs. Consumer paid Rs 897for a 1 kg bag of Fox nut, with total marketing cost of Rs 125, total marketing margin of Rs102, marketing efficiency of 3.50%, price spread of Rs 227 in channel I, and net price received by producer in channel II. The consumer paid Rs. 670 for a 1 kg bag of Fox nut. In channel II, the marketing cost is Rs 147, the marketing margin is Rs 128, the marketing efficiency is2.89%, and the price spread is Rs 275.

Keyword: Marketing Channels, Marketing Efficiency, Marketing Cost, Marketing Margin and Price spread

Fox nut or gorgon nut (Euryale ferox) is an aquatic crop belongs to Nymphaeaceae Family is boon to the rural poor, especially of north Bihar, Bengal and lower Assam who have perfectedart of cultivating Fox nut. The seeds of Fox nut are popped and eaten as roasted as well as used in preparation of various kind of sweets and recipes. It has nutritional and medicinal properties and there is a great export potential of this crop. Fox nut is one of important cultivable herbs and its origin is considered to be South-East Asia and China from where it spread to some other countries of the world. It is cultivated in tropical and sub-tropical regions of SouthEast Asia, Russia, North America and some parts of India. In India, it is cultivated inWest Bengal, Bihar, Manipur, Tripura, Assam, Jammu & Kashmir, Eastern Odisha, Madhya Pradesh, Rajasthan and Uttar Pradesh. However, it is commercially cultivated in North Bihar, Manipur, some parts of West Bengal and Madhya Pradesh. Bihar is one the largest producerof Fox nut in the country and accounts for more than 80 % of the total production (Kumar, 2018). Despite of that, the area under Fox nut cultivation is reported to be declined by about35% in past few decades from 20,000 ha to 13,000 ha (Singh, 2014). Darbhanga, Sitamarhi, Madhubani, Saharsa, Supaul, Araria, Kishanganj, Purnia and Katihar are the major Fox nut growing districts of Bihar. ICAR National Research Centre for Fox nut Research, Darbhanga has reported that total area under Fox nut cultivation in India is about 15000 hectares. The production of Fox nut seeds is about 120000 MT which after processing yield 40,000 MT of Fox nut pop. The estimated value of Fox nut production at farmers end is Rs.250 crore andit generates the revenue of Rs.550 crore at trader's level (Anonymous, 2010). Fox nut has nutritional and medicinal values. Fox nut pop is considered to be highly nutritious and healthy food. It is a good source of carbohydrates, proteins and minerals and is popular as a highly nutritious snack outside its traditional and religious connotation. Fox nut contains 12.8% moisture, 9.7% protein, 0.1% fat, 0.5% minerals, 76.9% carbohydrates, and 1.4 mg/100g of carotene (Sah et al., 2013). In terms of calorific value, Fox nut gives 362 kcal/100 gm for raw and 328 kcal/100 gm for popped. Hence, the calorific value of Fox nut compares wellwith staple food like wheat, rice, etc (Shankar et al., 2010). Fox nut is considered to be superior to dry fruits such as almonds, walnut, coconut and cashew nut in terms of sugar, protein, and ascorbic acid and phenol content (Bilgrami et al., 1983). In China, Fox nut is mandatory constituent in baby food because of its well established medicinal (Anonymous, 2014). Properties Fox nut is recommended for treatment of diseases regarding respiratory, circulatory, digestive, excretory and reproductive systems (Qudrat et al., 2000). The edible seed is known for its tonic, astringent, deobstruent, antirheumatic, Antidiuretic and roborant properties. It is also utilized to overcome post natal weaknesses in women and in case of menits aphrodisiac and spermatogenic potential is utilized (Jha et. al., 1991). Ayurveda, the Indian system of medicine recommends Fox nut to be beneficial in Tridosas (the seminal problem). In Unani system of medicine Fox nut is used against dysmenorrhoea. Fox nut is used as a tonic and for the treatment of leucorrhoea and good immunostimulant (Puri et al., 2000). Very few studies have been conduced to assess the costs and returns in Fox nut production in the state or national level. Considering the economic potentials of Fox nut, the present study was conducted in two prominent Fox nut growing districts Madhubani of Bihar for assessing costs and returns on its cultivation.

RESEARCH METHODOLOGY

Madhubani districts of north Bihar were purposively selected for conducting the study as have larger area under Fox nut cultivation in Bihar. A list of Fox nut growing blocks was prepared on the basis of Fox nut pond area and arranged in ascending order. Out of the total Fox nut growing blocks in Madhubani district,

Rajnagar block were selected randomly. After selection of block, list of all the villages were prepared and five villages from these two selected blocks were selected randomly. In this way, ten villages i.e. five percent villages from madhubani district were selected. Lists of all the Fox nut growers of all five percent selected villages in each selected block were prepared along with their pond area. The list was rearranged in ascending order based on their pond area under Fox nut cultivation. From the list of all Fox nut growers in a block, ten percent Fox nut growers were randomly selected. In this way altogether one hundred twenty Fox nut growers were selected for detailed study. Data from Fox nut cultivator were collected through survey methods through direct personal interview. Appropriate statistical tools were used to analyse the data and present the result. TheData pertained to the agricultural year 2023-2024.

Analytical Tools

Cost of Marketing:

1. C = Cf+ Cm1+ Cm2+ Cm3+ .....+ Cmn

2. Marketing Margin

AMI=Pri-(Ppi+Cmi)

3. Marketing Efficiency

MME = FP/ MC+MM

4. Price Spread

5. PS= MC + MM

RESULTS AND DISCUSSION

Table- 1: Classification based on participants' marketing channel preferences.

Channel – I: Producer - Wholesaler - Consumer

Channel – II: Producer – Wholesaler – Retailer - Consumer

S. No.	CHANNEL	Respondents Number	Respondents Small	Medium	Large	Percentage (%)
1	CHANNEL- I	17	8	7	2	17.00
2	CHANNEL -II	83	46	22	15	83.00
Total		**100**	**54**	**29**	**17**	**100.00**

Table 2**:** Marketing cost, marketing efficiency and price spread in marketing of Fox nut through channel-I.
Channel- I: Producer ----------Wholesaler----------Consumer

S. N.	Particulars	Fox nut Value in Rs. / 1 kg of Fox nut
1.	Producer sale price to Wholesaler	795
	Processing fee incurred by producer	104
2.	Cost incurred by the producer	
i	Packing cost	3
ii	Packing material cost	4
iii	Transportation cost	2
iv	Market cost	3
vi	Loading and Unloading cost	3
vii	Miscellaneous charges	6
	Total cost (i-vii)	21
Net Price received by producer		670
Wholesaler sale price to Consumer		897
Margin of Wholesaler		102
A	Total Marketing cost	125
B	Total Market margin	102
C	Marketing Efficiency	3.50%
D	Price Spread	227

The table 1: Shows that out of 120 samples collected in Madhubani district of Bihar for Fox nutmarketing. The study discovered that most of the samples are buying from Channel-II at 99 (82.50%), while 21 (17.50%)

were purchasing Fox nut from Channel-I.

It is stated in the table-2 that producer disclosed that the marketing price of Fox nut channel -I was Rs. 795 is the amount received by the Fox nut producer after net price deduction. 670. In themeantime, the Fox nut producer spends Rs.104 on marketing costs and processing fees. At the same time, the buyer bought a 1 kg pack of Fox nut from the Wholesaler for Rs.897. The wholesaler makes a profit of Rs.102 for each 1kg bag of Fox nut. In the end, the overall marketing expenses for a 1 kg bag of Fox nut in channel 1 amount to Rs 125 and the total market margin from marketing a 1 kg bag of Fox nut through channel 1 is Rs.102 Marketingefficiency of channel -I is 3.50% and price spread when marketing a 1 kg bag of Fox nut through channel 1 is 227 Puri A, Sahai R, Singh KL(2000).

Table 3: Marketing cost, marketing efficiency and price spread in marketing of Fox nut through channel-II.
CHANNEL- II : PRODUCER WHOLESALER RETAILER CONSUMER

S. N.	**Particulars**	**Fox nut Value in Rs. / 1 kg bag**
1.	Producer sale price to Wholesaler	795
Marketing cost incurred by producer		125
Net price received by producer		670
2.	Cost incurred by the Wholesaler	
i	Loading and unloading charges	3
ii	Carriage up to shop	2
iii	Weighing charges	3
iv	Transportation charges	5
v	Labour cost	3
vi	Miscellaneous charges	6
Total cost (i-vii)		22
Wholesaler price to Retailer		882
Margin of Wholesaler		65.00
Retailer price to Consumer		945
Margin of Retailer		63
A	**Total Marketing cost**	**147**
B	**Total Market margin**	**128**
C	**Marketing efficiency**	**2.89%**
D	**Price Spread**	**275**

Table 3: The marketing price disclosed for Fox nut channel-II by the supplier was Rs. 795 is the amount received by the Fox nut producer after deducting the net price. Six hundred and seventy. On the other hand, the Fox nut producer faces a marketing cost and processing fee of Rs.125. The wholesaler sells a 1 kg bag of Fox nut to the retailer for Rs 882, with a marketing cost of Rs 22. The wholesaler makes a profit of Rs 65 per 1 kg bag of Fox nut. The retailer sells 1 kg bag of Fox nut to the consumer for Rs 945 with a profit margin of Rs 63. Inthe end, the overall marketing expense for a 1 kg bag of Fox nut through Channel II amountsto Rs 147, while the total market profit for the same product through Channel II is also Rs. 128the marketing efficiency observed in channel 2 is. 2.89% and the difference in price are 275 Minten and Abhijeet Singh (2020) .

CONCLUSION:

The study revealed that there are two economic paths in the Fox nut industry in Bihar's Madhubani district: Path I (producer-retailer-consumer) and Path II (producer-goods-products-customers). With a total of 99 responses, Channel II is the most widely used commercial channel for Fox nut in the madhubani region. In channel I, the producer receives a net price of Rs. Consumer paid Rs 897 for a 1 kg bag of Fox nut, with total marketing cost of Rs 125, total marketing margin of Rs 102, marketing efficiency of 3.50%, price spread of Rs 227 in channel I, and net price received by producer in channel II. The consumer paid Rs. 670 for a 1kg bag of Fox nut. In channel II, the marketing cost is Rs 147, the marketing margin is Rs 128, the marketing efficiency is 2.89%, and the price spread is Rs 275.

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