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AN ECONOMIC ANALYSIS ON MARKETING OF BUTTON MUSHROOM IN PATNA DISTRICT OF BIHAR

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ABSTRACT

The study titled "An Economic Analysis on Marketing of Button Mushroom in Patna District of Bihar" aimed to evaluate the marketing structure and economic factors influencing button mushroom distribution in the Danapur block. Using purposive sampling, Danapur was selected due to its potential for mushroom cultivation. Within this block, 5% of the villages engaged in mushroom farming were chosen, and from these, 10% of farmers were randomly sampled for data collection. The research identified three key marketing channels: Channel I (Producer → Consumer), Channel II (Producer → Wholesaler → Consumer), and Channel III (Producer → Wholesaler → Retailer → Consumer). In Channel I, the consumer paid ₹135 per kilogram, with the producer receiving a net return of ₹121.50 after incurring ₹13.50 in marketing expenses. The producer's share of the final price stood at 90%, with a marketing efficiency of 9%. In Channel II, consumers paid ₹142 per kilogram, while producers earned ₹112.10 after spending ₹24.90 on marketing, yielding a 71.83% share and 2.56% marketing efficiency. Channel III reflected the highest consumer price at ₹165 per kilogram, but producers received only ₹102.10 due to marketing costs of ₹33.35. This channel recorded the lowest producer share (61.87%) and efficiency (1.62%). Overall, the study demonstrated that the inclusion of additional intermediaries reduced both the producer's share and the overall marketing efficiency. These findings suggest the need for more streamlined and direct marketing systems to maximize producer income and efficiency in the button mushroom supply chain.

Keywords: Button mushroom, Marketing channels, Producer's share, Marketing efficiency.

INTRODUCTION

Mushrooms, classified as edible fungi, were recognized for their significant nutritional and medicinal benefits. They were rich sources of proteins, vitamins, minerals, and antioxidants, which contributed to enhanced immune function and overall health. Their cultivation required specific environmental conditions, typically moist and shaded areas, enabling optimal growth. Among the various species cultivated globally, button mushrooms (Agaricus bisporus) were the most widely produced and consumed due to their mild flavor, ease of cultivation, and

adaptability. Button mushrooms were cultivated on composted substrates derived from agricultural wastes, thus promoting sustainable agricultural practices by recycling organic materials. The cultivation process involved several stages, including compost preparation, spawning, casing, and harvesting, each requiring careful management to maximize yield and quality. Economically, button mushroom farming provided an important source of income for rural households and contributed to food security. Their demand increased steadily due to rising awareness of their health benefits and growing popularity in vegetarian and vegan diets. In addition to their culinary applications, button mushrooms were studied for their therapeutic properties, including anti-inflammatory, antimicrobial, and anticancer potentials. Research efforts focused on optimizing cultivation techniques, improving shelf life, and enhancing nutritional content. Despite these advances, challenges such as market access, post-harvest losses, and price fluctuations persisted, affecting producers' profitability. Overall, button mushrooms played a vital role in nutrition, agriculture, and rural economy, demonstrating significant potential for further development and commercialization in various regions, including Bihar, India.

RESEARCH METHODOLOGY

The methodology employed for selecting the district, blocks, villages, and respondents involved a combination of purposive and random sampling techniques. The district of Patna was purposively selected to minimize inconvenience and time constraints for the investigator. Within Patna district, Danapur block was chosen based on the concentration of respondents engaged in button mushroom cultivation. A comprehensive list of villages within Danapur block was prepared, and five percent of villages with the highest number of button mushroom cultivators were randomly selected. Subsequently, a list of all button mushroom farmers in these villages was compiled and categorized into three farm size groups: small (less than 150 bags), medium (151–300 bags), and large (more than 300 bags). From a total of 100 farmers, respondents were randomly selected using proportionate random sampling. Additionally, five retailers, five producers, and five consumers were selected to study marketing cost, marketing margin, price spread, producer's share in consumer rupees, and marketing efficiency within the study area. Primary data was collected through a carefully designed schedule, while secondary data was sourced from books, journals, reports, and official records at district and block headquarters. Data collection was conducted via direct personal interviews through survey methods. The collected data pertained to the agricultural year 2024–2025. Appropriate statistical tools were applied to analyze the data and present the results effectively.

Analytical Tools

- **Cost of Marketing :** C = Cf+ Cm1+ Cm2+ Cm3+ ..... + Cmn
- **Margin of Market :** AMI=Pri-(Ppi+Cmi)
- **Spread in Price :** Marketing Cost + Market Margin
- **Efficiency of Marketing:** = (Price received by producer)/Marketing Cost + Marketing Margin
- **producer's portion of the consumer rupee :** (Price received by the farmer x100) / Retail price paid by the consumer

RESULTS AND DISCUSSION

Table 1: Distribution of respondents based on marketing channel preferences.

S. No.	CHANNEL	Respondents Number	Percentage (%)
1	**CHANNEL- I**	13	**13.00**
2	**CHANNEL -II**	31	**31.00**
3	**CHANNEL-III**	56	**56.00**
	Total	**100**	**100.00**

Table 1: The study revealed that among the 100 samples selected in Patna district of Bihar for the marketing of button mushrooms, the majority of respondents, 56 (56.00%), purchased mushrooms through Channel III. Meanwhile, 31 respondents (31.00%) procured button mushrooms via Channel II, and the remaining 13 respondents (13.00%) purchased directly through Channel I.

Table 2: Marketing Cost, Marketing Margin, Marketing Efficiency, Price Distribution, and Producer Share of Consumer Rupees from Channel I Button.

S. No	Particulars	Button Mushroom (₹/Kg)
1	Producer's Sale Price	135.00
2	Marketing Costs:	
2a	Packing Cost	1.50
2b	Transportation Cost	2.50
2c	Cleaning and Grading Cost	1.50
2d	Labour Cost	3.00
2e	Miscellaneous Cost	5.00
3	Total Marketing Cost	13.50
4	Net Price Received by Producer	121.50
5	Price Spread	13.50
6	Marketing Efficiency	9%
7	Producer's Share in Consumer Rupees	90%

Table 2: The analysis of Channel-I in the marketing of button mushrooms indicated that the producer sold the product directly to the consumer at a rate of ₹135 per kilogram. After accounting for marketing expenses of ₹13.50 per kilogram—which included costs like packing, transportation, and handling—the producer retained a net income of ₹121.50 per kilogram. This resulted in a total marketing cost and price spread of ₹13.50. The producer's share in the final consumer price was 90%, reflecting a highly favorable return. The marketing efficiency for this direct channel was computed at 9%, highlighting its effectiveness and minimal involvement of intermediaries.

Table 3: Marketing Cost, Marketing Margin, Marketing Efficiency, Price Distribution, and Producer Share of Consumer Rupees from Channel II Button.

S. No	Particulars	Button Mushroom (₹ / Kg)
1	Producer's Sale Price to Wholesaler	120.00
2	Cost Incurred by Producer:	
2a	Packing Cost	2.30
2b	Transportation Cost	2.90
2c	Market Cost	2.00
2d	Labour Cost	3.50
2e	Loading and Unloading Cost	0.70
2f	Weighing Cost	1.50
2g	Miscellaneous Charges	5.00
	Total Marketing Cost (a-g)	**17.90**
3	Net Price Received by Producer	102.10
4	Wholesaler Sale Price to Consumer	142.00
5	Cost Incurred by Wholesaler:	
5a	Loading and Unloading Charges	0.90
5b	Carriage up to Shop	1.60
5c	Weighing Charge	0.30
5d	Town Charge	1.70
5e	Transportation Cost	1.50
5f	Miscellaneous Cost	1.00
	Total Marketing Cost (a-f)	**7.00**
6	Margin of Wholesaler	15.00
	All Cost of marketing	**24.90**
	All Margin of Channels	**15.00**
	Price distribution	**39.90**
	Marketing Efficiency	**2.56%**
	Producer's Share in Consumer Rupees	**71.83%**

Table 3 The study found that in Channel-II, the producer sold button mushrooms at ₹120 per kilogram, incurring marketing expenses of ₹17.90, which resulted in a net price of ₹102.10 for the producer. The wholesaler faced marketing costs amounting to ₹7.00 and earned a margin of ₹15.00 per kilogram. Consequently, the wholesaler's selling price to the consumer was ₹142 per kilogram. The total marketing cost for this channel summed up to ₹24.90, with a combined marketing margin of ₹15.00. The overall price spread between producer and consumer stood at ₹39.90. The producer's share of the final consumer price was calculated at 71.83%, while the marketing efficiency for Channel-II was estimated at 2.56%.

Table 4: Marketing Cost, Marketing Margin, Marketing Efficiency, Price Distribution, and Producer Share of Consumer Rupees from Channel III Button.

S. No	Particulars	Amount (₹/Kg)
1	Price received by producer from wholesaler	120.00
2	**Costs borne by producer**	
2a	- Packing cost	2.30
2b	- Transportation cost	2.90
2c	- Market charges	2.00
2d	- Labour charges	3.50
2e	- Loading & unloading charges	0.70
2f	- Weighing charges	1.50
2g	- Miscellaneous expenses	5.00
	Total cost incurred by producer	**17.90**
3	Net price retained by producer	102.10
4	Price charged by wholesaler to retailer	137.00
5	**Costs borne by wholesaler**	
5a	- Loading & unloading	0.90
5b	- Carriage to shop	1.60
5c	- Weighing charges	0.30
5d	- Town charges	1.70
5e	- Transportation cost	1.50
5f	- Miscellaneous expenses	1.00
	Total cost incurred by wholesaler	**7.00**
6	Wholesaler's margin	10.00

Table 4: The study showed that in Channel-III, the producer sold button mushrooms at ₹120 per kilogram, bearing marketing costs of ₹17.90, which led to a net price of ₹102.10 per kilogram. The wholesaler faced marketing expenses of ₹7.00 and earned a margin of ₹10.00, selling the mushrooms to the retailer at ₹137 per kilogram. The retailer then marketed the product to the final consumer at ₹165 per kilogram, incurring marketing costs of ₹8.45 and earning a margin of ₹19.55. In total, Channel-III involved marketing costs of ₹33.35 and marketing margins of ₹29.55, with an overall price spread of ₹62.90. The producer's portion of the consumer's price was calculated at 61.87%, and the channel's marketing efficiency was estimated at 1.62%

CONCLUSION

The research on button mushroom marketing in Patna district, Bihar, provided valuable insights into the performance and efficiency of different marketing channels. Three main channels were identified: direct sales from producers to consumers (Channel-I), sales through wholesalers (Channel-II), and sales involving both wholesalers and retailers (Channel-III). The majority of consumers obtained their mushrooms via Channel-III, highlighting the important role retailers play in the supply chain. Among the channels,

Channel-I was found to be the most efficient, with producers receiving 90% of the consumer price, coupled with the lowest marketing costs and margins due to the absence of intermediaries. In contrast, Channels II and III involved additional intermediaries, resulting in lower producer shares of 71.83% and 61.87%, respectively, alongside higher marketing costs and margins. These factors contributed to a decline in marketing efficiency, recorded at 2.56% for Channel-II and 1.62% for Channel-III. Furthermore, both the total marketing costs and the price spread increased from Channel-I to Channel-III, reflecting the cumulative costs added at each stage of distribution. The findings underscore how intermediaries affect producer profitability and consumer prices. The study suggests that reducing the number of intermediaries and promoting direct marketing could enhance producer incomes and overall marketing efficiency. Strengthening producer groups and cooperative marketing initiatives was recommended to improve price realization and minimize marketing expenses. Overall, the study offers a detailed understanding of the marketing structure for button mushrooms in Patna, serving as a useful resource for policy efforts aimed at optimizing market systems and supporting farmer welfare.

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