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Marketing of button mushrooms in Badaun district, Uttar Pradesh: A socio-economic and marketing efficiency study

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Abstract

The marketing of button mushrooms (*Agaricus bisporus*) in Badaun District, Uttar Pradesh, presents an opportunity for smallholder farmers to diversify their income sources. This study examines the socio-economic profile of mushroom producers and the prevailing marketing channels in the region. Despite increasing demand for mushrooms due to their nutritional value, significant inefficiencies in the marketing system hamper the potential benefits to farmers. These include inadequate infrastructure, reliance on multiple intermediaries, and high post-harvest losses. The research identifies the costs associated with production, packaging, transportation, and retailing, revealing that marketing margins are higher in wholesale markets compared to direct-to-consumer sales. Data collected from 180 respondents highlights the challenges faced by producers, such as limited market access, price volatility, and consumer awareness. The study also evaluates the effectiveness of various marketing channels, including local retail markets, direct sales, and wholesale markets. By analyzing the price spread and the producer's share in the final price, this paper underscores the disparities between what consumers pay and what producers receive. Based on the findings, recommendations are made to improve the marketing system, including better infrastructure, direct marketing strategies, and consumer education. Ultimately, the study aims to enhance the profitability and sustainability of button mushroom farming in Badaun District.

Keywords: Button mushrooms, marketing efficiency, socio-economic profile, price spread, producer's share

Introduction

Button mushrooms (*Agaricus bisporus*) have become a valuable crop in India, offering economic opportunities for farmers in various regions, including Badaun District, Uttar Pradesh. Known for their nutritional benefits, mushrooms have gained popularity in both domestic and international markets. In Badaun, mushroom cultivation offers smallholder farmers an alternative source of income, yet challenges remain in marketing the produce. The marketing process is hindered by the lack of cold storage facilities, reliance on multiple intermediaries, and price volatility, which reduces the producer's profitability. The market structure is predominantly unorganized, with farmers primarily relying on local retail markets and wholesalers to sell their mushrooms. These intermediaries capture a significant portion of the final price, leaving farmers with only a small share of the consumer's rupee. The socio-economic characteristics of mushroom producers play a crucial role in shaping their ability to adapt to modern farming techniques and market demands. Many farmers in Badaun face challenges such as limited access to technology and capital, further complicating their marketing efforts. This study seeks to assess the current marketing channels for button mushrooms, analyze the costs and margins involved, and evaluate the constraints in the existing marketing system. By understanding these dynamics, the study aims to offer practical recommendations for improving marketing efficiency and enhancing the economic sustainability of mushroom farming in the region.

Research Methodology

Data for this study was collected from 180 respondents (mushroom producers) using a structured questionnaire.

The survey focused on various aspects such as socio-economic characteristics, marketing channels, costs, margins, and constraints faced by producers. Descriptive statistical methods were employed to analyze the data, and cost and efficiency measures were derived for each marketing channel. The research was conducted in Badaun District, which is known for its diverse agricultural activities, including button mushroom production. The district has seen a rise in mushroom farming in recent years due to favorable climatic conditions and government support programs.

Analytical Tools

- **Acharya's marketing efficiency formula:** $MME = FP / MC + MM$
- **margin analysis:** Price to Consumer – Price to Producer *100

Price to Consumer

- **Marketable Surplus:** $P - \{C + C_f + W + S\}$
- **Marketing Cost:** $C_f + C_{m1} + C_{m2} + C_{m3} + \dots + C_{mn}$

Results and Discussion

Socio-Economic Profile of Respondents

The age distribution provides insight into the involvement of different age groups in mushroom farming and marketing activities.

Table 1: Age Distribution of Respondents

Age Group (Years)	Number of Respondents	Percentage (%)
18-30	40	22.22%
31-40	50	27.78%
41-50	60	33.33%
51-60	20	11.11%
60+	10	5.56%

Discussion

Majority in the 41-50 age group: The high proportion of farmers in this age group (33.33%) suggests that middle-aged individuals are the primary drivers of button mushroom production in the region. These farmers likely have established agricultural practices and experience.

Younger farmers are engaged: A significant portion (22.22%) of respondents was between the ages of 18-30, which indicates the increasing appeal of mushroom farming among younger generations. This trend suggests that mushroom farming is seen as an innovative and profitable venture.

Gender Distribution of Respondents

Table 2: Gender Distribution of Respondents

Gender	Number of Respondents	Percentage (%)
Male	120	66.67%
Female	60	33.33%

Discussion

Dominance of male respondents: Men dominate the cultivation aspect of mushroom farming in Badaun (66.67%), likely due to the physical labor involved. However, women (33.33%) play a vital role, particularly in post-harvest activities such as packaging, retailing, and selling.

Educational Qualification of Respondents

Table 3: Educational Qualification of Respondents

Education Level	Number of Respondents	Percentage (%)
No Formal Education	20	11.11%
Primary Education	50	27.78%
Secondary Education	60	33.33%
Higher Secondary	30	16.67%
Graduate/Postgraduate	20	11.11%

Discussion

Educational diversity: Most respondents (33.33%) have completed secondary education, which suggests that they possess basic literacy and numeracy skills necessary for understanding farming techniques and managing finances.

Limited higher education: Only 11.11% of farmers have pursued higher education, which could be a factor limiting their adoption of advanced farming techniques or engagement in value-added mushroom products.

Monthly Income of Respondents

Table 4: Monthly Income of Respondents

Income Group (INR)	Number of Respondents	Percentage (%)
< 10,000	40	22.22%
10,000-20,000	60	33.33%
20,001-30,000	50	27.78%
30,001-40,000	20	11.11%
> 40,000	10	5.56%

Discussion

Majority in lower-income groups: The majority of respondents (33.33%) earn between ₹10,000-20,000 per month, which is consistent with the profile of smallholder farmers. The relatively low income (compared to urban standards) indicates that mushroom farming is a supplementary source of income.

High income variability: A small portion of respondents (5.56%) earn above ₹40,000, indicating the potential for high returns from mushroom farming, particularly when marketing is optimized.

Marketing Channels for Button Mushrooms

Understanding the marketing channels helps to assess the flow of mushrooms from farm to consumer and the efficiency of these channels.

Table 5: Marketing Channels for Button Mushrooms

Marketing Channel	Number of Respondents	Percentage (%)
Direct Sales (Farmer to Consumer)	50	27.78%
Local Retail Markets	70	38.89%
Wholesale Markets	40	22.22%
Co-operatives/E-Commerce	20	11.11%

Discussion

Retail markets dominate: Local retail markets (38.89%) are the most commonly used channel, followed by direct sales (27.78%) and wholesale markets (22.22%).

Emerging e-commerce: Co-operatives and e-commerce platforms account for 11.11% of the marketing channels, which could

be an area of growth as online sales become more prevalent in rural areas.

Marketing Costs and Margins

The evaluation of marketing costs and margins helps identify the inefficiencies in the marketing structure.

Marketing Cost Distribution

Table 6: Marketing Cost Distribution

Marketing Activity	Cost (INR per unit)
Cost of Production (by Farmer)	₹50
Cost of Transportation	₹20
Cost of Packaging	₹10
Cost of Retailing	₹15
Total Marketing Cost	₹95

Discussion

Total cost analysis: The total marketing cost per unit of button mushrooms is ₹95. The largest cost component is transportation (₹20), followed by production costs (₹50). **Packaging costs:** Packaging costs (₹10) are relatively low, which could be an opportunity for producers to explore more sustainable and cost-effective packaging options.

Marketing Margin Calculation

Table 7: Marketing Margin Calculation

Marketing Channel	Price Paid by Consumer (INR)	Price Received by Producer (INR)	Marketing Margin (INR)
Direct Sales to Consumers	₹120	₹100	₹20
Retail Markets	₹130	₹95	₹35
Wholesale Markets	₹140	₹90	₹50

Discussion

Wholesale markets: These channels have the highest marketing margin (₹50), suggesting that middlemen (wholesalers) capture a significant share of the consumer price.

Direct sales: Producers who sell directly to consumers retain more of the consumer price (₹20 margin).

Marketing Efficiency and Price Spread

Table 8: Marketing Efficiency Calculation

Marketing Channel	Output (INR)	Input (INR)	Marketing Efficiency (%)
Direct Sales to Consumers	₹120	₹95	126.32%
Retail Markets	₹130	₹95	136.84%
Wholesale Markets	₹140	₹95	147.37%

Discussion

Efficiency trend: Wholesale markets, despite having the highest margin, show the best marketing efficiency (147.37%). This suggests that wholesalers add value to the product, thus increasing efficiency in the process.

Conclusion

The socio-economic profile of mushroom farmers in Badaun district highlights key aspects of button mushroom

production and marketing. A significant portion (33.33%) of farmers are in the 41-50 age group, indicating that middle-aged individuals dominate the sector. However, the involvement of younger farmers (22.22% in the 18-30 age group) suggests growing interest in mushroom farming, signaling potential for future growth. Gender-wise, males are more involved in farming (66.67%), while females contribute significantly to post-harvest activities, such as packaging and retailing (33.33%). Most respondents (33.33%) have secondary education, providing basic skills for farming and financial management. However, only 11.11% have higher education, which may limit the adoption of advanced farming practices. In terms of income, the majority of respondents (33.33%) earn between ₹10,000-20,000 per month, indicating that mushroom farming is a supplementary source of income. A small percentage (5.56%) earn over ₹40,000, showing the potential for higher returns. Marketing channels are dominated by local retail markets (38.89%), followed by direct sales (27.78%) and wholesale markets (22.22%). The total marketing cost per unit is ₹95, with transportation being the largest expense (₹20). Marketing margins are highest in wholesale markets (₹50), while direct sales to consumers yield a lower margin (₹20). Despite higher margins in wholesale markets, marketing efficiency is greatest in these markets (147.37%), suggesting wholesalers play a significant role in adding value. Overall, mushroom farming has growth potential, but improving marketing strategies could enhance profitability and efficiency.

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