International Journal of Agriculture and allied Sciences 9 (1) 40-45, 2024

MARKETING OF MUSHROOM IN PRAYAGRAJ DISTRICT OF UTTAR PRADESH

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ABSTRACT: The market for mushrooms continues to grow due to interest in their culinary, nutritional, and health benefits. They also show potential for use in waste management. The Indian mushroom market is primarily driven by growing health consciousness among consumers along with the escalated need for rich nutrients and cholesterol-free food products. Furthermore, the emerging trend of veganism and the widespread adoption of mushrooms as a substitute for meat on account of their rich umami taste are also propelling the market growth in the country. The increasing utilization of mushrooms in dietary supplements as they contain a rich amount of fibre and digestive enzymes that promote gut and immunological health is catalysing the product demand naturally. Moreover, India is getting numerous export opportunities due to the elevating requirement for processed mushroom variants, especially across western countries; this resulted in creating a positive outlook for the regional market. Apart from this, continuous advancements in mushroom packaging technologies, such as the development of humidity-regulating packaging materials that prevent water condensation on mushrooms to extend their shelf-life, are also augmenting the market growth. Furthermore, the rising usage of mushrooms by the pharmaceutical industry for the treatment of several diseases, such as hypercholesterolemia and hypertension, is acting as another growth-inducing factor. In addition to this, significant investments in smart automation technologies for mushroom production to enhance yield and decrease expenses are expected to fuel the Indian mushroom market over the forecast period.

Key Words: Mushroom, marketing, traders, nutritional, diseases, humidity, food

Indian agriculture, as it exists today has come a long way from its present image is commercial and traditional in its method of farming. The latest trends in consumer behaviour surge the demand for high-quality niche Products and forces. The Agriculture Sector is to step up and adopt commercially, technically, and economically viable Agribusiness solutions (Shirur et al., 2016). Mushrooms are the fruiting bodies of some members of the lower group of plants, called fungi. Due to this reason, the mushrooms are also called fleshy fungi. The fungus and hence mushrooms are characterized by the absence of chlorophyll which is responsible for imparting green colour to plants. Due to the absence of chlorophyll, mushrooms are not able to synthesize their food and must depend upon outside sources for their nutritional requirements. It is because of this that mushrooms grow saprophytically on dead organic matter or parasitically with other living matter. The mushrooms are fruit bodies or reproductive structures emanating from mycelium, which under natural conditions remain buried under the soil. Mushroom production can be a lucrative cottage industry for low-income rural households in developing countries. The activity is labour-intensive and can provide full or part-time employment. A small mushroom production business can be established with low capital investment and with minimal requirements for space and equipment. As with any business, the availability of inputs (for mushrooms, agricultural wastes, or by-products such as straw and manure) and access to markets is essential. In addition, training and a source of spawn are necessary.

Business and investment opportunities in this sector have suddenly jumped manifold. In the present diet-conscious era mushrooms are increasingly considered a future vegetable owing to their medicinal and nutritional properties and consumer demand for mushrooms markedly expanded in recent years. Mushroom cultivation is unique in the sense that it is the most efficient and economically valuable technology for the conservation of lignocellulosic material into high-quality protein food. Mushroom cultivation boosts the income of millions of farmers. The mushroom industry globally has expanded both horizontally and vertically, meaning that the expansion has been in the production and addition of newer types of mushrooms for commercial cultivation, both edible and non-edible mushrooms.

Economic Importance and Nutritional Value of Mushroom

The economic importance of mushrooms lies primarily in their use as food for human consumption. The exotic flavour, taste and fleshiness of mushrooms have made it an important delicacy in the human diet. Mushroom is considered to be a complete, healthy food and suitable for all age groups. Though the nutritional value is determined by the type, stage of development and other environmental conditions, mushrooms are rich in proteins, dietary fibre, vitamins, and minerals. They have insignificant lipid levels and high proportion of polyunsaturated fatty acids resulting in low calorific value.

The protein content, though varies in different mushrooms, is generally high. Mushrooms are an excellent source of vitamins especially C and B (Folic acid, Riboflavin, Niacin and Thiamine) and minerals like potassium, sodium, and phosphorus. It also contains other essential minerals like Calcium, Zinc and Magnesium in traces. Mushrooms are also known to have medicinal values as these have been shown to promote immune function, boost health, and lower the risk of cancer inhibit tumour growth and support the body‟s detoxification mechanism. Mushrooms thus have enormous potential for production as quality food.

Origin of Mushrooms

Mushroom production in Asian countries started 1000 years ago. The cultivation of mushrooms is a relatively new phenomenon in India. Mushrooms such as Auricularia, Flammulina and Lentinula were most likely cultivated for the first time around the year 600-800 AD in China and Asian countries (Chang and Wasser,2017).

Scientific cultivation, however, started only at the beginning of the 20th century, when pure cultures of mushrooms were prepared from the store and tissue. Cultivation at the beginning of the 20th century was focused on button mushrooms mainly in the USA and Europe. In the first half of the 20th century, the focus was on the cultivation of button mushrooms in the west and to a lesser extent on shiitake in the east.

In the second half of the 20th century, there were rapid changes in the rate of growth of mushroom production and number of species brought under commercial cultivation. By the end of the 20th century, the share of button mushrooms in total world production was less than 40per cent , which in the next ten years became around 30per cent . The 21st century, particularly the last ten years has witnessed a sudden rapid rise in the cultivation of mushrooms other than buttons.

Statement of the Problem

The ever-increasing population, shrinking agricultural land, environmental issues and water budgeting and quality food demands are going to be burning issues. To meet these challenges, diversification in food portfolio in areas like horticulture is of paramount importance to impart sustainability to the farming system. Mushroom cultivation is considered a substitution for valuable fruits and vegetables that have all nutritional values and can be farmed in very economic conditions of low land usage, lower labour capacity, with low farming activities and less capital investment.

Justification of Problem

The study was mainly aimed at studying the constraints in procurement and moving of mushrooms by the company, identifying the factors influencing remunerating prices of mushrooms to analyse the purchasing behaviour of consumers and identifying the measures to be taken in the value chain management of mushrooms.

Farmers must analyse the data with the rationalization of harvesting groups to reduce the cost of harvesting. Farmers must have some knowledge of the latest updates of marketing prices and also the removal of go-between‟ 's involvement.

RESEARCH METHODOLOGY

Sampling design: A multistage stratified random sampling procedure was adopted for the present investigation to select the ultimate unit of the sample.

First stage - Selection of District

Second stage - Selection of Block

Third stage - Selection of Village

Fourth stage - Selection of Respondent

Fifth Stage- Selection of Market and Market Functionaries

Selection of District: - There are 75 districts in Uttar Pradesh state. Out of these Prayagraj district of Uttar Pradesh was selected. The study is Prayagraj district was selected purposively for the study.

Selection of Block: - A complete list of all 23 blocks of the selected district Prayagraj district was obtained from the district headquarters out of which the Phulpur block was selected due to the high production of mushrooms.

Selection of the villages: - A complete list of the villages of Phulpur block was 151 villages out of which 10per cent villages that is 15 villages were selected randomly for the present study.

Selection of Respondents: - A list of all the mushroom growers of the block is prepared. Out of the total mushroom growers10 per cent of mushroom growers were selected randomly according to farmer's productivity and experience.

Selection of Market and Market Functionaries: Selection of the market is a crucial stage of sampling. The market is selected purposively in the Research Area. An appropriate number of markets are selected nearest to the mushroom-producing area and district headquarters.

RESULTS AND DISCUSSION

The study shows in table 3.1 that the majority of respondent's 53.34per cent had less than two years‟ experiences in mushroom production and the remaining 46.66per cent of respondents had 2-5 years‟ experience in mushroom production. Results about occupation indicated that the majority of respondents (41.67per cent) were following mushroom cultivation as their primary occupation followed by secondary occupation (26.67per cent) and tertiary occupation (31.66 per cent) as the sample average calculated for the study. (Table- 3.2). In the study area, only 20 per cent of mushroom producers sold the produce through channel I. In channel II, the retailer buys mushrooms from a commission agent cum wholesaler and sells them to consumers. About 48 producers (43.33per cent) sold through channel II and 36.67 per cent of the respondents marketed through channel III

This table compares the economics of milk marketing across three channels. In Channel I, producers sell directly to consumers, incurring minimal marketing costs, thus receiving a higher net price for their milk. Channel II involves commission agents or wholesalers, where producers face higher marketing costs and commissions, reducing their net receipt significantly. Channel III, similar to Channel I, has moderate marketing costs for producers but does not involve commission charges, resulting in a better net price than Channel II but lower than Channel I. Consumers pay the highest price in Channels II and III, reflecting the added costs of intermediaries. The producer's share in the consumer's rupee is highest in Channel I, illustrating its efficiency. The price spread, which represents the difference between what the consumer pays and the producer receives, is significantly lower in Channel I, indicating a more efficient channel with less markup by intermediaries. Finally, marketing efficiency, which might assess how well the channel delivers value to the producer relative to the consumer price, varies significantly across channels, with Channel I being the most efficient and Channel II the least.

The constraints faced by the mushroom growers in production are presented in Fig. 3.4. Most of the mushroom‟s growers were facing contamination of crops, followed by limited knowledge about the cultivation of mushrooms, high cost of inputs‟s, pest and disease problems Inadequate technical labour, non-availability of good quality of spawn, less availability of technical and financial support for production and management practices, high rate of spawn, seasonal production, and problem of storing in the order of ranking starting from the most severe constraint.

Table-1: Experience in Mushroom Production of simple size groups

EXPERIENCE IN MUSHROOM PRODUCTION			
S.NO	PARTICULAR	NUMBER	**PERCENTAGE**
1.	< 2 years	59	**53.34**
2.	2 – 5 years	51	**46.66**
	TOTAL	**110**	**100.00**

Table-2: Detail Description Of Occupational Distribution In Different Size Of Farm Groups

OCCUPATIONAL DISTRIBUTION:			
S.NO	**PARTICULARS**	**NUMBER**	**PERCENTAGE**
1.	One occupation (Primary occupation)	46	**41.67**
2.	Two occupations (Secondary occupation)	29	**26.67**
3.	Three occupations (Tertiary occupation)	35	**31.66**
TOTAL		**110**	**100**

Channel I

Channel II

Channel III

Table-3: Marketing channels involved in marketing of mushrooms in the study area

CHANNEL NO.	MARKETING CHANNEL	NUMBER	PERCENTAGE
I	Producer – consumer	22	**20.00**
II	Producer – commission agent / wholesaler – consumer	48	**43.33**
III	Producer – retailer – consumer	40	**36.67**
	TOTAL	**110**	**100**

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.Table-4: Marketing efficiency, price spread, marketing margin and marketing cost mushroom

S.NO	PARTICULARS	CHANNEL - I	CHANNEL – II	CHANNEL – III
1	**PRODUCER**			
	Gross price received	158.25	141.5	**155**
	Marketing cost			
	a. packing and weighing	8.5	8	**9**
	b. transportation	-	4.5	**8.45**
	c. loading and unloading	-	3.5	**8**
	Commission charge	-	10	**-**
	Total	8.5	26	**25.45**
	Net price received	149.75	115.5	**129.55**

2	**Commission agent / wholesaler**			
	Commission charge	-	10	-
	Marketing cost	-	6.2	-
	margin	-	4.8	-
	Sale price	-	152.5	-
3	**Retailer**			
	Purchase price	-	152.5	**155**
	Marketing cost	-	31.30	**30.65**
	margin	-	13.70	**12.50**
	Sale price	-	197.5	**198.15**
4	**Consumer**			
	Price paid by the consumer	160	197.5	**198.15**
5	Producer's share in consumer rupee	94.62	58.48	**65.37**
6	Price spread	49.75	139.01	**132**
7	**Marketing efficiency**	**16.6**	**4.3**	**179**

Table-5: Different Constraints in Production and Marketing with Suitable Remedial Measures

S.NO	CONSTRAINTS IN PRODUCTION	AVERAGE SCORE	RANK
1	Contamination of cropped bags	81.27	**I**
2	Limited knowledge about cultivation of mushroom	75.33	**II**
3	High cost of inputs	74.23	**III**
4	Pest and disease problem	70.87	**IV**
5	Inadequate of technical labour	64.43	**V**
6	Non-availability of good quality spawn	63.87	**VI**
7	Less availability of technical and financial supportfor production and management practices	62.70	**VII**
8	High rate of spawn	61.97	**VIII**
9	Seasonal production	59.67	**IX**
10	**Problem of storing**	**58.23**	**X**

.Table-6: Constraints in the production of mushrooms

S.NO	CONSTRAINTS IN MARKETING	AVERAGE SCORE	RANK
1	Less knowledge about marketing of mushroom	77.30	I
2	Exploitation by middlemen	75.83	II
3	Limited cold storage facility	75.07	III
4	Non availability of organized retail market	74.60	IV
5	Delayed payment to the produce	72.93	V
6	High cost of transportation	68.20	VI

The constraints faced by the mushroom growers in marketing are presented in Fig. 3.5. The marketing problems faced by the growers are less knowledge about the marketing of mushrooms followed by exploitation by middlemen, limited cold storage facilities, non-availability of the organized retail market, delayed payment to produce and high cost of transportation.

CONCLUSIONS

The market for mushrooms continues to grow due to interest in their culinary, nutritional, and health benefits. They also show potential for use in waste management. The Indian mushroom market is primarily driven by growing health consciousness among consumers along with the escalated need for rich nutrients and cholesterol-free food products. Furthermore, the emerging trend of veganism and the widespread adoption of mushrooms as a substitute for meat on account of their rich umami taste are also propelling the market growth in the country.

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The marketing of mushrooms in India is not yet organised. It is a simple system of producers selling directly to retailers or even to the customer, which has its limitations. After the production of mushrooms more importantly seasonal mushrooms have also exacerbated its marketing problems. There have been frequent reports of gluts in north Indian states during the winter months, forcing the distress sale of the mushrooms. This reinforces that an effort to increase the production without solving its marketing problems would be counterproductive. There is a sizable increase in acreage and production of mushrooms in India. National production 1.55 lakh tons (0.5 per cent of global production). Diversification is minimal in India with button mushrooms at 73 per cent and others 23 per cent of total production. Per-capita consumption <100 g/annum (20-22kg/annum in China).

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