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A study on marketing strategies of mushroom production in Prayagraj District of Uttar Pradesh

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Abstract

The study titled “A Study on Marketing Strategies of Mushroom Production in Prayagraj District Of Uttar Pradesh” was carried out for the year 2024, under the guidance of Dr. Mukesh K. Maurya. Prayagraj district was purposively selected as it comes after Sonapat, Panipat and Yamuna Nagar, which are the top mushroom producing districts in Haryana state, with their annual production of 3425 MT, 1690 MT and 1050 MT respectively in the year 2017-18 and this production was 1039 MT in Prayagraj district. Out of 7 blocks of the district, Thanesar block was selected purposively due to presence of large number of mushroom growers. From this block 5% villages were selected randomly. The total number of button mushroom growers interviewed was 100. The number of respondents were selected randomly in each random 10 villages. A structured schedule was used to collect the data through survey method. The study concluded that there were three marketing channels in mushroom marketing, which helped to calculate total marketing cost, marketing margin, and price spread. The Shepherd's formula was used to analyse the marketing efficiency. The constraints were also discussed with growers and some suitable measures were also suggested for their problems.

Keywords: Mushroom, marketing system, socio-economic analysis, constraints, price spread

Introduction

Button Mushroom (*Agaricus* spp.) is the most popular mushroom variety grown and consumed the world over. In India, its production earlier was limited to the winter season, but with technology development, these are produced almost throughout the year in small, medium and large farms, adopting different levels of technology. The species being grown in most farms is the white button mushroom (*Agaricusbisporus*) belonging to Class Basidiomycetes and Family Agaricaceae.

White button mushrooms are grown all over the world and account for 35-45% of the total mushroom production. In India, large units with production capacities between 2000 – 3000 tonnes / annum, have been set up mainly as export-oriented units in the southern, western and northern regions. A large number of small units without climatic control equipment exist throughout India and function during the autumn and winter months only.

A big gap exists between the demand and supply position of white button mushrooms in the United States and European market. India exports the highest quantity of the mushroom produced in the country to USA. Netherlands and China account for 60% of the export of mushrooms. Germany is the largest importer and France and UK are large producers as well as consumers. Marketing problem is experienced in the winter months (December- February) when more than 75% of the annual production comes in market for sale in limited duration and market area. Farmers face the consequences of over-saturated market and are forced to sell

their produce at a cheaper price. The commercial units need to establish mushroom processing unit so that during peak periods when there is glut of mushrooms in the market, the growers can resort to preservation of mushroom and as such fluctuation in prices will not affect the project economy.

Marketing of mushrooms in India is not yet organized. It is the simple system of producers selling directly to retailer or even to the consumer. Wholesale distributor is mostly missing. However, trade in the processed (canned and dried) is sizeable and organized. In other countries 10% of the total cost is earmarked for marketing.

The cultivation of white button mushrooms throughout the year under controlled condition is restricted to a few commercial units and much of the production is under natural conditions during the winters. Majority of the growers in India do not have pasteurization facility and other sophisticated machinery/infrastructure for round the year production of white button mushroom. As such, button mushroom is cultivated seasonally when climatic conditions are favourable and production expenses are minimum. Many growers in Haryana, especially in Sonapat, Ambala and Hisar have revolutionized the cultivation of white button mushroom by adopting very simple and cheap technology of construction of mushroom houses (mud houses with thatched roofs). Seasonal growing of white button mushroom in Haryana and Punjab has many advantages like nearness to market, easy and cheap availability of raw material coupled with utilization of family labour. The growers in HP do not use compost

prepared by long method because pasteurized compost is readily available from mushroom projects located at Solan and Palampur.

The importance of mushroom cultivation also stems out from following facts

- Mushroom cultivation generates direct and indirect employment.
- It requires very little land, as it is cultivated in closed rooms.
- The used compost can be reused as good manure in other field crops.
- It has capacity of being exported and earning foreign exchange.
- It provides rich diet to vegetarians.
- Being rich in proteins and low in carbohydrates and fat, it is very good for the patients of heart, diabetes, and obesity etc.

The upper regions of the state have been identified for the cultivation of white button mushroom and lower regions for 'Dhingri'. In other places the conducive situation is artificially created.

Objectives

1. To study the socio-economic and economic profile of mushroom growers in study area.
2. To identify the marketing channels, marketing cost, marketing margin and marketing efficiency.

Research Methodology

The study was purposively carried out in Prayagraj district of Uttar Pradesh, because this district accounts for large scale production and marketing of mushroom. Their annual production of 3425 MT, 1690 MT and 1050 MT respectively in the year 2017-18 and this production was 1039 MT in Prayagraj district. A large number of mushroom growers in the district have received training on mushroom production from various government institutions and schemes. Hence, Kurukshetra district was selected for in-depth study with respect to mushroom.

There are 8 blocks in Thanear, Chail, Kada, Prayagraj, Manjanpur, Mooratganj, Newada Sarsawan, Sirathu block in Prayagraj district. Out of this, Prayagraj block was selected due to high production of Button mushroom growers. Therefore this block was selected purposively.

A list of villages of Prayagraj block was obtained from District horticulture department Prayagraj. Out of total 111 villages, 5% villages were selected randomly.

A list of all mushroom growers of these villages was obtained from District Horticulture department, Kurukshetra and out of this list 10% mushroom growers were selected randomly. Mushroom growers were divided into three size groups, viz, Small, Medium and large on the basis of number of mushroom bags produced by them.

Prayagraj Mandi was selected on the basis of highest arrival of mushroom in the market for studying the marketing cost, margin and price spread in different channels involved in marketing of Tomato.

Investigation regarding different marketing channels involved in Tomato marketing was done by selecting a random sample of such intermediaries as commission

agents, wholesalers, and retailers. There were 30 commission agents, 20 wholesalers and 25 retailers, out of which 10 commission agents, 10 wholesalers and 10 retailers were selected randomly to study marketing cost, price spread in different marketing channels.

Analytical Techniques Employed

Total cost of marketing

The total cost incurred on marketing by various intermediaries involved in the sale and purchase of the commodity till it reaches the ultimate consumer will be computed as follows:

$$C = C_f + C_{m1} + C_{m2} + C_{m3} + \dots + C_{mn}$$

Where

$C_{m1} + C_{m2} + C_{m3} + \dots + C_{mn}$ = Cost incurred by various market intermediaries in buying and selling

C = Total cost of marketing.

C_f = Cost borne by the producer from the time produce leaves the farm till the sale of the Produce.

Marketing Margin

Marketing Margin was calculated using the formula:

$$\text{Marketing Margin} = \frac{\text{Retail or selling price} - \text{Actual cost}}{\text{Price Spread}}$$

$$GMM = P_e - P_f$$

Where,

GMM = Gross marketing margin.

P_e = Price received by consumer

P_f = Price received by producer.

Producer's Share in consumer's rupee

$$P_s = P_f / P_e \times 100$$

Where,

P_s = Producer's share in consumer rupee.

P_f = Price of produce received by the farmer

P_e = Price of produce paid by consumer.

Marketing efficiency

$$MME = [RP / (MC + MM)] - 1$$

Where,

MME = Measurement of marketing efficiency.

RP = Retail price.

MC = Marketing cost.

MM = Marketing margins

Results and Discussion

Socio-economic Profile of Mushroom Growers

The various components of socio-economics status of the sample households viz. Age, structure of the household heads, size of household's, level of literacy, etc. Have been discussed. Sample growers have been classified on the basis of number of bags such as Small (below 5000 bags),

Medium (8000-16000 bags), and large size growers (above 16000 bags). The Table 1 indicates that the number of respondents in small, medium and large size of farms 49, 26 and 25 respectively. The average size button mushroom

cultivated in number of bags Small, Medium and large size farms group were 7894.6, 15481.4 and 20129.7 respectively per Farms households.

Table 1: Details description of the mushroom cultivated in different size of farm groups

S. No.	Particular	Size of farm groups			Sample Average
		Small	Medium	Large	
1	Size of Farms groups (in Numbers)	49	26	25	33.3
2	Average Size of button Mushroom Cultivated (in no of bags)	7894.6	15,481.4	20,129.7	14,501.9

Age and Gender Structure of Sample Size of Household's

Age is Considered as an important socio-economic factor which influences the decision-making capacity of human being. Age also gives an idea with respect to earning

capacity of a person. Hence, the present study has been undertaken to have an idea about the age pattern of mushroom growers family in the study area which have been presented in Table 2.

Table 2: Detail description of sample size of households/families' size in different size of farms groups

S.NO	Particular	Size of farm groups			Sample Average
		Small	Medium	Large	
1	Average size of farm families	6.95 (100%)	8.74 (100%)	10.2 (100%)	8.63 (100%)
2 (a)	Male	3.98 (57.2)	4.99 (57.09)	5.94 (58.2)	4.97 (57.5)
(b)	Female	2.97 (42.7)	3.75 (42.90)	4.08 (40.0)	3.66 (42.4)
3	Age Composition				
I	Below 15 years	1.89 (27.1)	2.10 (24.02)	2.95 (28.9)	2.31 (26.7)
II	15-60 years	3.62 (52.08)	4.98 (56.9)	4.30 (42.1)	4.30 (49.8)
III	60 years and above	1.44 (20.7)	1.66 (18.9)	2.95 (28.9)	2.01 (23.2)

Literacy of Sample Respondent

Education is one of the important factors which act as a catalyst in the process of human resource development. The educated person is expected to adopt agricultural technology more precisely understanding of literate person, it is expected that they are likely to get comparatively FM more and respond to make a change the agricultural production process more rationally. Due to better employment than illiterate persons.

Table 3: Detail Description of literacy in Different Size of farm groups

S.NO	Particular	Size of farm group			Sample Average
1	Average size of farm families	6.95 (100%)	8.74 (100%)	10.2 (100%)	8.63 (100%)
2	Educational Status				
A	Primary	0.78 (11.2)	1.93 (22.0)	0.99 (9.7)	1.23 (14.2)
B	Middle high School	1.76 (25.3)	1.87 (21.3)	2.16 (21.1)	1.93 (22.3)
C	Intermediate	2.82 (40.5)	2.73 (31.2)	3.95 (38.7)	3.16 (36.6)
D	Graduation and above	1.59 (22.8)	2.21 (25.2)	2.91 (28.6)	2.24 (25.9)
3	Total literacy	6.68 (96)	8.01 (91.6)	9.52 (93.3)	8.07 (93.5)
4	Total illiteracy	0.27 (3.88)	0.73 (8.35)	0.68 (6.66)	0.56 (6.48)

The Table 3 reveals the Literacy percentage in small farm group is 96.0, in medium group was 91.6 and in large farm group it was 93.3. From the table we can see that a large number of respondents have obtained Intermediate level of education at sample average of 36.6%, followed by graduation at 25.9%, middle high school at 22.3% and 14.2% have obtained primary level of education. It also indicates that 93.5% respondents are literate and 6.48% were illiterate.

Marketing of Mushroom in different Marketing Channels

Efficient marketing of Button Mushroom plays an important role in increasing the producers due to consumer rupee and maintain the tempo of increased production. Mushroom marketing in particular is mainly in hands of middleman like village merchant, retailer and is only price receiver. The marketing costs are determined by the performance and of different marketing functionaries in different channels which in turn influences return to producer. In this context here is need to study the efficiency of marketing channels in the marketing of mushroom that is cultivated and marketed extensively in the study area. From the preliminary survey conducted in study area, it was observed that the marketing of button mushroom was done mainly through following three channels.

Channel- I: Producer- Consumer

Channel- I1: Producer- Village Merchant/Retailers - Retailer- Consumer

Channel- III: Producer -Commission agent/Wholesaler- **Channel I: Producer. -Consumer**

Table 5: Marketing Cost, Marketing Margin, Marketing Efficiency and Price Spread in different Size of Farms Group

Sr. No.	Particulars	Value in Rupees
1	Producer price to Consumer	120
2	Cost incurred by the Producer	1.00(0.83)
1	Packing Cost	1.00(0.83)
2	Packing material cost	1.00(0.83)
3	Transportation Cost	1.50(1.25)
4	Labour cost	1.00(0.83)
5	Market Cost	2.00(1.66)
6	Loading and Unloading charges	1.50(1.25)
7	Weighing Charges	0.80(0.66)
3	Miscellaneous charge	1.20(1.0)
3	Total cost (i-viii)	10.00(8.3)
4	Net price received by producer	110(91.6)
5	Price spread	10(8.3)
6	Producer Share in Consumer rupee	91.66
7	Consumer paid price	120(100)
8	Marketing Efficiency	11.0(9.16)

From the Table 5, it was observed that in selling mushrooms, producer charges for packing cost 1.00, packing material cost 1.00, transportation cost 1.5, market cost 2.0, labour cost 1.00, loading and unloading charges 1.5, weighing charges 0.80, miscellaneous charges 1.2 and total cost was 10 rupees per kg. So, the net price received by

the producer was Rs. 110 per kg. Producer share in consumer rupees percent is 91.66, Price spread 10, consumer paid price 120 and marketing efficiency is 11.

Channel II: Producer – Village Merchant/Retailers - Consumer

Table 6: Marketing Cost, Marketing Margin, Marketing Efficiency and Price Spread in different Size of Farms Group

Sr. No.	Particulars	Value in Rupees
1.(A)	Producer Price to Consumer	100
2	Cost incurred by the Producer	
I	Packing Cost	1.00(0.80)
ii	Packing material cost	1.00(0.80)
iii	Transportation cost	1.50(1.2)
Iv	Labour Cost	1.00(0.80)
v	Market Cost	2.00(1.61)
Vi	Loading and Unloading Charges	1.50(1.20)
Vii	Weighing Charges	0.80(0.64)
Viii	Miscellaneous Charges	1.20(0.96)
3	Total cost (i-viii)	10.00(8.06)
4	Net price received by producer	90(72.5)
(B)	Village Merchant / Retailers Purchase Price	100
1	Cost incurred by the Village merchant /retailer	
i.	Transportation cost	1.00(0.80)
ii.	Loading and Unloading Charges	1.50(1.20)
iii.	Weighing Charges	1.00(0.80)
iv.	Carriage up to Shop	1.30(1.04)
v.	Town Charges	1.20(0.960)
vi.	Losses	1.00(0.80)
vii.	Miscellaneous Charges	8.00(6.45)
3	Retailers Margins	16(4.8)
4	Sale price of Retailers	124
5	Price Spread	32(25)
6	Consumer paid price	124(100)
7	Marketing Efficiency	3.64(2.93)

From the Table 6, it was observed that in selling mushrooms, producer charges for packing cost 1.00, packing material cost 1.00, transportation cost 1.5, market cost 2.0, labour cost 1.00, Loading and unloading charges 1.5, weighing charges 0.80, miscellaneous charges 1.2 and

total cost was 10 rupees per kg. So, the net price received by the producer was Rs. 90 per kg. Producer share in consumer rupees percent is 72.5, Price spread 32, consumer paid price 124 and marketing efficiency is 3.64,

Channel III: Producer – Commission agent/Wholesaler Retailer- Consumer**Table 7:** Marketing Cost, Marketing Margin, Marketing Efficiency and Price Spread in different Size of Farms Group

Sr. No.	Particulars	Value In Rupees
1.(A)	Producer price to consumer	80
2.	Cost incurred by the producer	
I.	Packing cost	0.50(0.41)
II.	Packing material cost	1.00(0.83)
III.	Transportation cost	1.00(0.83)
IV.	Labour cost	0.50(0.41)
V.	Market Cost	1.00(0.83)
VI.	Loading and Unloading Charges	0.40(0.33)
VII.	Weighing Charges	0.40(0.33)
VIII.	Miscellaneous Charges	0.40(0.33)
s3.	Total cost (i-viii)	5.20(4.33)
4.	Net price received by producer	74.8(62.3)
(B)	Commission agent margin	90
1	Total cost	
I.	Loading and Unloading charges	1.00(0.83)
II.	Transportation cost	1.00(0.83)
III.	Grading	1.20(1.0)
IV.	Packing	1.10(0.91)
V.	Losses and Miscellaneous charges	0.70(0.58)
VI	Commission agent margin	10(8.33)
VII.	Total cost	15(12.5)
(C)	Sale price of commission agent to retailers	95
i.	Weighing Charges	1.30(1.80)
ii.	Loading and Unloading	1.50(1.25)
iii.	Transportation cost	0.70(0.58)
iv.	Town charge	1.40(1.16)
v.	Miscellaneous charges	0.60(0.50)
vi.	Retailers margin	19.5(16.2)

Table 7. indicates that cost incurred by the producer was about Rs. 5.20. which included packing cost of Rs. 0.50. packing material cost of Rs. 1, transportation cost Rs. I. Labour cost Rs.0.50, market cost Rs. 1, loading and unloading charges Rs. 0.40, weighing charges Rs. 0.40, and miscellaneous charges Rs. 0.40. Overall, the net price received by the producer was Rs. 74.8/kg the commission agent purchase price was about Rs. 90/kg and the cost incurred by the commission agent was about Rs. 15, which included loading and unloading charges Rs.1 transportation cost Rs. 1, grading cost Rs. 1.2, packing cost Rs. 1.10, losses and miscellaneous charges Rs. 0.7, and commission agent margin was Rs. 10. The sale price of commission agent to retailers was Rs.95 and the total cost including the retailers margin was Rs. 25. Overall, the sale price of retailers to consumer was Rs. 120.

Marketing efficiency was 2.65 and price spread was 45.2. It also reveals that commission agent margin is Rs 10 per kg and retailer margin is Rs. 19.5 per kg. Price paid by consumer was 120 and price received by producer was 74.80.

Summary and Conclusion

The study concluded that the mushroom production is a viable source of income and employment for rural people in the study area and was undertaken mostly by the small and medium category farmers. Farmers were categorized into three categories: small size respondent/growers (below 8000 bags), medium size respondents/growers (8000-16000) and large size growers/respondents (above 16000bags) based on

production of button mushroom.

The family size of small farm group is 6.95, medium is 8.74 and large is 10.2. Total literacy was 93.5 percent and were highest in small farm size followed by large and then medium and a large number have obtained the intermediate level of education. There are more respondents with primary occupation at 79.8%, followed by secondary occupation at 12% and tertiary occupation at 7.8%.

There are three marketing channels found. In Channel I: The total marketing cost was 10 rupees per kg so, the net price received by the producer was Rs. 110 per kg Producer share in consumer rupees percent is 91.66. Price spread was 10, consumer paid price 120 and marketing efficiency in Channel II: The total marketing cost was 10 rupees per kg. So, the net price received by the producer was Rs, 90 per kg. Producer share in e consumer rupees percent is 72.5. Price spread 52, consumer paid price 124 and marketing efficiency is 364 Channel III: The total marketing cost is 15.7 and the Marketing efficiency was 2.65 and price spread was 45.2. It also reveals that commission agent margin is Rs 10 per kg and retailer margin is Rs. 19.5 per kg. Price paid by consumer was 120 and price received by producer was 74.80.

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