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## A study on marketing of mushroom (button mushroom) in Patiala district of Punjab

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### Abstract

Mushrooms are one such component that not only impart diversification but also help in addressing the problems of quality food, health and environment related issues. One of the major areas that can contribute towards goal of conservation of natural resources as well as increased productivity is recycling of agro-wastes including agro-industrial waste. Utilising these wastes for growing mushrooms can enhance income and impart higher level of sustainability. The present study was carried out in Patiala district of Punjab. Patiala district was purposely selected due to production of button mushroom is at commercial level. Multi – stage random sampling procedure was followed to select respondents. Out of 9 blocks of Patiala district Patiala block was selected purposely based on number of respondents was doing button mushroom farming. 10 villages were selected randomly. The number of button mushroom growers interviewed was 80 which were divided into three categories (small, medium and large) later on. The number of respondents were selected randomly in each random 10 villages. A structured schedule was used to collect the data through survey method. When conclusion was drawn there were it is seen that three marketing channels in button mushroom marketing, which helped to calculate total marketing cost, market margin, market efficiency and price spread. The constraints were also discussed with growers and suggested some suitable measures. This present study pertains to the agriculture year 2021-2022.

**Keywords:** Marketing channels, marketing margin, marketing efficiency, constraints and suggestions

### Introduction

Mushroom is considered to be a complete, health food and suitable for all age groups, child to aged people. The nutritional value of mushroom is affected by numerous factors such as species, stage of development and environmental conditions. Mushrooms are rich in protein, dietary fiber, vitamins and minerals. The digestible carbohydrate profile of mushroom includes starches, pentoses, hexoses, disaccharides, amino sugars, sugar alcohols and sugar acids. The total carbohydrate content in mushroom varied from 26-82% on dry weight basis in different mushrooms. The crude fibre composition of the mushroom consists of partially digestible polysaccharides and chitin.

Mushroom farming today is being practiced in more than 100 countries and its production is increasing at an annual rate of 6-7%. In some developed countries of Europe and America, mushroom farming has attained the status of a high-tech industry with very high levels of mechanization and automation. Present world production of mushrooms is around 3.5 million tonnes as per FAO Stat and is over 25 million tonnes (estimated) as per claims of Chinese Association of Edible Fungi. The wide variation in world production data in FAO Stat and CAEF is partly due to the fact that in FAO Stat, mushroom means button mushroom (*Agaricus spp.*) along with the boletes, morels and tuber, whereas CAEF data covers all types of mushrooms. China alone is reported to grow more than 20 different types of mushroom at commercial scale and mushroom cultivation has become China's sixth largest industry.

Presently, three geographical regions – Europe, America and East Asia contribute to about 96% of world mushroom production. With the rise in the income level, the demand for mushrooms is bound to increase in other parts of the world as well. China has been producing mushrooms at very low costs with the help of seasonal growing, state subsidies and capturing the potential markets in the world with processed mushrooms at costs not remunerative to the growers in other mushroom producing countries.

As winter approaches, India's farmers once again are exploring the mushroom option as a means of boosting their incomes.

As per government data India in 2013-14 produced 17,100 metric tonnes of mushrooms, and by 2018 this increased to 4,87,000 MT (about 29 fold increase in four years). Yet India only accounts for about 2% of the world's mushroom production, as the lion's share is with China which accounts for over 75% of global production.

### **Methods and Materials**

The methodology used in present study entitled "A study on marketing of mushroom (button mushroom) in Patiala district of Punjab" are discussed under following sub heads.

1. Sampling design
2. Sampling procedure
3. Nature and source of data
4. Analytical tools employed

#### **1. Sampling Design**

Exploratory research design was followed in the present study. The purpose of design to identify the problems, for more precise formulation of problem including the identification of variable.

#### **2. Sampling Procedure**

Stratified random sampling procedure was adopted for the study to select sample. The sampling stages were as follow.

- Stage I Selection of District
- Stage II Selection of block
- Stage III Selection of village
- Stage IV Selection of growers
- Stage V Selection of market
- Stage VI Selection of market functionaries.

#### **Stage I Selection of district**

The study was purposely carried out in Patiala district of Punjab because Patiala district accounts for large scale production at commercial level. A good number of mushroom growers in this district have received training on mushroom production from horticulture department of Patiala. Hence this district was selected for in-depth study with respect to mushroom.

#### **Stage II Selection of block**

Patiala district has 9 blocks (Patiala, Patiala rural, Rajpura, Nabha, Samana, Bhunerheri, Patran, Ghanaur, Shambhu kalan, and Sanour) and 6 sub divisions (Patiala, Nabha, Patran, Rajpura, Samana, and Dudhan Sadhan). Among these blocks Patiala block selected purposely due to presence of highest number of mushroom growers.

#### **Stage III Selection of village**

A complete list of villages of Patiala was obtained from the Horticulture Department of Patiala. Almost 360 villages in Patiala block. In those villages about 60 villages have mushroom growers and from those 10 villages selected randomly.

#### **Stage IV Selection of growers/respondents**

In each randomly selected button mushrooms grower village, the respondents list was prepared with the help of Department of Horticulture, Patiala. After that button mushroom growers categorized in three size groups on the basis of number of bags production *viz* Small, Medium and Large size of button mushroom grower's farms.

1. Small size button mushroom respondents/growers –

below 4000 bags.

2. Medium size button mushroom respondents/growers- 4000 – 6000 bags
3. Large size button mushroom respondents/growers- above 6000 bags

#### **Stage V Selection of market**

The market Patiala sabji mandi was main primary market was all vegetables and button mushroom marketing of Patiala block, out of these Patiala market was selected purposely for the present study. Patiala local vegetable markets was secondary market selected purposely because all market functionaries bring their button mushroom for the sell from the different part of Patiala district.

#### **Stage VI Selection of market functionaries**

The market functionaries which are involved in different vegetables and button mushroom considered for data collection, regarding different market and different channels. A list of all the market functionaries was prepared with the help of market head out of that 10% that each market functionaries were selected for the present study all together 27 wholesalers and 35 retailers were selected randomly for the study.

**Nature and source of data:** The data required for present investigation were primary in nature.

#### **Primary Data**

Primary data was collected from the sample mushroom growers, rural venders and retailers through survey method and personal interview with the help of pre-tested well prepared interview schedules covering various aspects to answer the objection of this study. The primary data recorded regarding socio-economic characteristics of the mushroom growers and market functionaries.

**Secondary Data:** Secondary data were obtained from district agriculture office, department of horticulture publications and government sites.

#### **Duration of the study**

The study was conducted in agriculture year 2021-2022.

#### **Analytical tools**

These are some analytical tools was used in data collection

**1. 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 computed as follows:

$$C = Cf + Cm1 + Cm2 + Cm3 + \dots + Cmn$$

Where

C = Total cost of marketing

Cf= Cost born by the producer from the time produce leaves the farm till the sale of produce. Cmn= Cost incurred by middlemen in the process of buying and selling.

**2. Price Spread:** The price spread is workout by computing the difference between the market price and the net price received by the producers. This difference represents the gross marketing margin.

$$GMM = P_c - P_{fb}$$

Where,

GMM = Gross Marketing Margin

Pc = Price Paid by consumer Pfb = Price received by producer

**3. Marketing Efficiency:** Marketing efficiency of any activity or process is defined as the ratio of input and output. It will measured by following equation:

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

Where,

MME=Measurement of marketing efficiency

RP= Retail Price

MC= Marketing cost

MM= Marketing margins

**4. Marketing Marin:** The term marketing margin refers to the different in places for a commodity at different stages of the marketing system. In the widest sense marketing margin is the difference in price received by the producer and the price paid by ultimate consumer. Marketing margin include all costs of assembling processing storage transportation, handling, wholesaling and retailing in the process of marketing moving of produce from the farmer to the ultimate consumer.

Marketing Margin = Retail or Selling price- Actual cost

### 5. Producer's share in Consumer' Rupee:

$$Ps = P_f/P_c * 100 \text{ Where,}$$

Ps = Producer's share in Consumer rupee

Pf = Price of produce received by the farmer Pc = Price of produce paid by consumer.

### Results and Discussions

A systematic presentation of results is a most important part of any research investigation that enables the researcher to either confirm or reject the proposed hypothesis. The present study entitled "A study on marketing of mushroom (button mushroom) in Patiala District of Punjab. The results of the analysis carried out for fulfilling the specific objectives of the study are presented under the following headings.

#### 1. Socio-economic profile of the mushroom growers.

In this section, the various components of socio-economic status of the sample households *viz* age, structure of the household, level of literacy, etc have been discussed. Sample mushroom growers have been classified on the basis of level of bags of mushroom cultivation small (below 4000 bags), medium (4000-6000 bags) and large size growers (above 6000 bags).

**Table 1:** Detail Description of the button mushroom cultivated in different size of farm group

S. N.	Particulars	Size of Farms Groups			Sample Average
		Small	Medium	Large	
1.	Size of farm groups (in numbers)	45	21	14	26.666
2.	Average size of button mushroom cultivated in no of bags	3658	5285	7546	5496.33

Number of Respondents= 80

$$S+M+L=45+21+14=80$$

Table1 indicates that the number of small, medium and large size of farms group were 45, 21 and 14 respectively. The average size button mushroom cultivated in number of bags in small, medium and large groups were 3658 bags, 5285 bags and 7546 bags respectively per farm households.

#### 2. Structure sample size of households/families

The structure and size of households/families play an important role in the economy of farming and gives an idea about the presence of population on the land.

Detail Description of sample size of households/Families Size in Different Size of farms groups

**Table 2:** the average size of the farms families in small size group is 5.32, medium size group is 7 and in the large size group is 8.92

S. N.	Particulars	Size of farms group			Sample Average
		Small	Medium	Large	
1.	Average size farm families	5.32(100)	7(100)	8.92(100)	7.08(100)
2.	Male	3.20(60.15)	3.85(55.00)	4.90(54.93)	4.03(56.92)
2.	Female	2.12(39.85)	3.15(45.00)	4.02(45.06)	3.04(43.05)
3.	Age composition				
I	Below 15 years	1.55(29.13)	2.20(31.42)	2.95(33.07)	2.23(31.49)
II	15-60 years	2.4(45.11)	3.10(44.28)	3.60(40.35)	3.03(42.79)
III	60 years and above	1.37(25.75)	1.70(24.28)	2.37(26.56)	1.81(25.56)

**Note:** Figures in the parenthesis indicates percentage to the total size of families.

**Table 3:** the marketing cost was same in the both channels II and III while in channel I it was only 9 rupees per kg.

S. N.	Particulars.	Channel I	Channel II	Channel III	Sample Average
1.	Marketing cost	9	15	15	13
2.	Marketing margin	-	9	32	13.66
3.	Market efficiency	8.88	2.75	1.36	4.33
4.	Price spread	9	26	41	25.33
5.	Producer's share in consumer's rupee	88.75	71.11	57.65	72.50

Table 1.1 indicates that the average size of the farms families in small size group is 5.32, medium size group is 7 and in the large size group is 8.92. it is also indicates that percentage of males in the families are more as compared to females in every size groups. However the it also indicates that in the respondents families the people who belong to age group 15 to 60 years are highest followed by below 15 years and 60 years and above.

## **2. Marketing Pattern of Button Mushroom Production**

Efficient marketing of Button Mushroom plays an important role in increasing the producer's share in consumer's rupee and maintain the tempo of increased production. Mushroom marketing in particular is mainly in hands of middleman like village merchant, retailer and producer is only price receiver. The marketing costs are determined by the performance and efficiency of different marketing functionaries in different channels which in turn influences return to producer. In this context there 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 II:** Producer-Village Merchant/Retailers-Consumer

**Channel III:** Producer-Commission agent/Wholesaler-Retailer-Consumer

## **3. Marketing cost, Marketing margin, Marketing efficiency and Price spread in all the channels**

Table 3 indicates that the marketing cost was same in the both channels II and III while in channel I it was only 9 rupees per kg. However the marketing efficiency was in decreasing order from channel I to channel III. On an average marketing margin was 13.66 rupees per kg in all three channels. Whereas the price spread was increasing from channel I to channel II from 9 to 41 rupees per kg respectively. The producers share in consumers rupees is 88.75% in channel I, 71.11% in channel II and 57.65% in channel III.

## **Conclusion**

1. Farmers were categorized into three categories: small size respondent/ growers (below 4000bags), medium size respondents/growers (4000– 6000) and large size growers/respondents (above 6000bags) based on production of button mushroom
2. The family size of small farms group is 5.32, medium is 7 and large is 8.92.
3. There are three marketing channels found Channel – I: Producer – Consumer Channel – II: Producer – Village Merchant/Retailers – Consumer Channel – III; Producer – Commission agent/Wholesaler – Retailer – Consumer
4. Channel I:The total marketing cost of button mushroom in all channels is average is 9 rupees per kg with marketing efficiency 8.88% and price spread is Rs 8/kg and producer share in consumer rupee is 88.75%.
5. Channel II: The total marketing cost is Rs 15/ kg, marketing margin is 9 rupees per kg, price spread is Rs 26 /kg, market efficiency is 2.75% and producers share in consumer rupee is 71.11%.
6. Channel III: The total marketing cost is Rs 15/kg marketing margin Rs 32/kg, marketing efficiency 1.36

price spread is 42 rupees per kg and producers share in consumer rupee is 57.65%.

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