

## Mushroom Marketing Channels and Consumer Behaviour : A Critical Analysis

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### ABSTRACT

Mushrooms are valued high for their nutritional and medicinal properties. However, their consumption among the masses is not common. Hence, the present study was undertaken to understand the marketing channels and mushroom consumer behaviour among the people. The extent of variation in price spread observed in the average selling price when sold to consumers, retailers and wholesalers for all the mushroom varieties was studied which varied between Rs. 27-40. The perishability and lack of processing facilities for mushrooms is the main reason for such a huge price escalation as the growers will mostly depend on the marketing channels to sell their produce. Majority consumers preferred button mushroom over other mushroom varieties though, they are on par with respect to the nutritional and medicinal properties and are easier and cheaper to cultivate. Hence, Extension assumes a major role in spreading awareness on this among the growers and the consumers.

MUSHROOMS are widely appreciated all over the world for their nutritional and medicinal properties since ancient times. Mushrooms, besides having low fat, high proteins, high vitamins, contain several minerals (Phosphorous and Potassium) and trace elements (Selenium). Mushrooms contain substantial amount of dietary fibres and are unlimited source of bioactive molecules and valuable enzymes with around 126 therapeutic effects (Wasser, 2010 and Badalyan, 2012). Mushrooms are proven to have immune modulating, antioxidant, genoprotective, antitumor, hypocholesterinemic, antidiabetic, hepatoprotective and other medicinal properties (Badalyan, 2000, Wasser, 2010 and Badalyan, 2012).

Global mushroom industry has seen a rapid growth with the production increasing more than 25-fold during the last 35 years (from about 1 billion kg in 1978 to 27 billion kg in 2012), whereas, the human population has grown 1.7 times during the same period (Royse, 2014). On the contrary, in spite of varied agro-climate conditions together with abundant agriculture residues and cheap labour, the mushroom production and in turn their consumption in India is insignificant compared to global levels. With the conspicuous growth of mushroom production only in recent years, India produces little more than 100,000 tonnes of fresh mushrooms. But, its contribution amounts to less than one per cent of global mushroom production.

Consequent to the lesser domestic production, the per capita mushroom consumption of 30 g per annum in India is also very less compared to 4000 g in western countries (Wakchaure, 2011).

In India, though mushrooms are cultivated commercially since the 1970s and 80s, its consumption is not common among the people. The precise data on production and consumption of different edible mushrooms in India is lacking because of inadequate studies in this area. Even the scarce studies are causing obscure understanding about the perceptions and trends on mushroom consumption behaviour among people. Moreover, the consumer preference and perception studies on mushrooms are vital as they lead us to develop appropriate extension methods to popularise mushrooms or promote particular variety of mushroom based on their preference in a locality. It is felt that, research thrust given to understand the marketing and consumption pattern of mushrooms is not commensurate to the significance it holds. Hence, the present study was undertaken to analyse the marketing channels and mushroom consumer behaviour among the people.

The present study was conducted in Karnataka state of India. The information on mushroom marketing channels was collected from 50 mushroom growers spread across Karnataka eliciting data on major

marketing channels, branding, washing and packing. The data on mushroom consumption was collected from 150 mushroom purchasers drawn randomly across 15 points of sale spread across the state. The data on consumer profile characters, frequency of purchase, mode of consumption, places of consumption, consumers' preference of variety and the price paid for mushrooms was collected to analyse the consumer behaviour. The descriptive statistics was used to analyse the results and draw appropriate inferences for the study.

Of the 50 mushroom production units selected for the study, 36 were very small units (less than 10 kg per day), 11 were small (11-50 kg per day), one was medium (51-100 kg per day) and 2 were very big (>500 kg per day) units. With respect to the variety of mushroom cultivated, majority (37) are cultivating oyster mushroom (*Pleurotus* sp), eight growers cultivating only white button (*Agaricus bisporus*), seven cultivating milky mushroom (*Calocybe indica*) and one cultivating paddy straw mushroom (*Volvariella volvacea*). Four growers cultivated more than one variety of mushrooms in their unit.

The results of major marketing channels, branding, washing and packing by the mushroom units are presented in Table I. It is observed that, very small units mostly sell their produce to consumers and retailers; whereas, very big units depend mostly on wholesalers for selling their produce. Smaller units are selling almost equally to the consumers (directly) and

to the retailers / wholesalers. One unit with medium level of production mostly sells its mushroom among the retailers. Small units are not branding their produce, whereas very big units are branding their mushroom. Majority of the growers are not washing the fresh mushroom which is a welcome sign from the consumer point of view. Washing with any chemicals is not good for consumers' health and washing with water leads to excess absorption of water, rendering more weight to mushrooms and leading to fast decay. All the very big units and majority of other mushroom units are adopting their own package at the farm. Majority use 160-180 GSM polythene for packing.

The extent of variation in price spread observed in the average selling price when sold to consumers, retailers and wholesalers for all the mushroom varieties is presented in Table II. The difference in the price realised by the growers while selling directly to consumers and retailers was varying between Rs. 27-40 for different varieties with an average of Rs. 29.6 (17.79%). The same while selling directly to consumers and wholesalers for different mushrooms was varying around Rs. 50 with an average difference of Rs. 46.8 (34.21%). The difference in the price paid by consumers at farm gate and at market is different for different mushrooms. This difference was Rs. 13.88 (7.47%) for button, Rs. 34.2 (19.35%) for oyster and Rs. 45.02 (28.21%) for milky mushroom with an average difference of Rs. 38.67 (23.24%). The perishability of mushroom is the main reason for such a huge price escalation as the growers will mostly

TABLE I  
*Classification of mushroom units based on the scale of production and the marketing channels used by mushroom growers*

Category of units	Number of units	Major marketing channels			Branding		Washing		Packing	
		Consumers	Retailers	Wholesalers	Yes	No	Yes	No	Yes	No
Very small	36	15	14	7	9	27	12	24	25	11
Small	11	5	1	5	5	6	2	9	8	3
Medium	1	0	1	0	1	0	0	1	1	0
Big	0	0	0	0	0	0	0	0	0	0
Very big	2	0	0	2	2	0	1	1	2	0
Total	50	20	16	14	17	33	15	35	36	14

TABLE II  
*Price spread for different marketing channels for different mushrooms*

Mushroom Variety	Average Rate for consumers at farm	Average for retailers at farm	Average rate for wholesalers at farm	Average price when purchased from market by consumer	Difference between rate for consumers and retailers at farm	Diff between rate for consumers and wholesalers at farm	Difference between price for consumers at farm and market
Button	185.8	147.5	135	199.68	38.3(20.61)	50.8(34.44)	13.88(7.47)
Milky	176.7	147.5	—	210.9	29.2(16.53)	-	34.2(19.35)
Oyster	159.6	132.2	110	204.62	27.4(17.17)	49.6(37.52)	45.02(28.21)
Oyster / Milky	170	135	120	207.76*	35(20.59)	50(37.04)	-
Paddy straw	200	160	—	—	40(20.00)	-	-
All	166.4	136.8	119.6	205.07	29.6(17.79)	46.8(34.21)	38.67(23.24)

\* Calculated based on average of both mushrooms (Figures in the parenthesis indicate the differences in percentage)

depend on the marketing channels to sell their produce. The lack of processing facility among most of the growers and the distance of market place also adds to the steep price spread for the mushrooms. The efficient marketing system backed by timely transport, storage, processing facility and collective marketing efforts by closely located mushroom units can help the farmers realise higher returns.

TABLE III  
*Profile characteristics of mushroom purchasers*  
 (n=150)

Criteria	Category	Frequency	Percentage
Sex	Male	98	65.33
	Female	52	34.67
Age (Years)	<25	16	10.67
	25-50	119	79.33
	>50	15	10.00
Education	Primary	15	10.00
	PUC/Diploma/ITI/+2	26	17.33
	Graduate	70	46.67
	Post graduate and above	39	26.00
Food habit	Veg	62	41.33
	Egg	18	12.00
	Non veg	70	46.67
Income level	Low	31	20.67
	Medium	57	38.00
	High	49	32.67
	Very high	13	8.67

The profile characteristics of consumers presented in Table III shows that majority of the respondents were males (65.33%), middle age group (79.33%), graduation or more educated (72.67%) and with medium and high family income (70.67%). With respect to the food preference, majority were non-vegetarian (46.67%) followed by vegetarian (41.33%) and the remaining were egg-vegetarians. The skewed proportion of males among the respondents is mainly due to the responses given mostly by males while accompanied by female family members.

It can be seen that, the mushroom is yet to find its way to the kitchen of less educated and the poor. The education on health benefits of mushrooms and eliminating the myths of mushrooms as poisonous or non vegetarian food by creating awareness about them among the public through mass media. This is also significant when we see the frequency of mushroom purchased even by the mushroom purchasers (Table IV). Majority of the respondents (46%) are purchasing occasionally followed by nearly 34% purchasing at an interval of either monthly or bimonthly. The mushrooms are purchased mostly (58.67%) from shopping malls / super markets. This is an indication that, mushrooms are yet to reach most of the vegetable markets.

From Table IV it can be observed that, button mushroom is the most preferred variety among the consumers. Other mushrooms, which are on par with button mushroom on their nutritional quality, are less

TABLE IV  
*Mushroom consumer behaviour*  
 (n=150)

Consumer behaviour	Response category	Frequency	Percentage
Frequency of purchase	Weekly	17	11.33
	Fortnightly	13	8.67
	Monthly	29	19.33
	Bimonthly	22	14.67
	Occasionally	69	46.00
Frequently purchased at	Vegetable vendors	42	28
	Super market	88	58.67
	Mushroom units	12	8
	R&D Centre/Govt office	3	2
	Others	5	3.33
Preferred variety	Button	96	64.43
	Oyster	33	22.15
	Paddy straw	1	0.67
	Milky	15	10.07
	Shiitake/others	4	2.68
Preferred Packaging	Loose	17	11.33
	Polythene	92	61.33
	Punnet	38	25.33
Frequented recipe at home	Canned	3	2
	Soup	31	20.81
	Curry	72	48.32
	Manchurian	29	19.46
	Mushroom rice	16	10.74
Frequented recipe at restaurant	Others	1	0.67
	Soup	22	15.07
	Curry	37	25.34
	Manchurian	69	47.26
	Mushroom rice	15	10.27

preferred. The possible reasons could be non availability, lack of awareness about their quality or cooking etc. Extension has a role to work on this direction. Curry and Manchurian are the most preferred recipes at home and restaurant, respectively. The indianisation of mushroom recipes and their

popularisation can lead to their diverse use. The packing industry though, is most vibrant; the mushroom industry is yet to make full adoption of improved packaging to offer quality produce to the consumers as presently they use mostly the polythenes for packaging.

In developing countries, the importance of edible mushrooms within consumer preferences and perceptions has not been studied in great detail. Results of the present investigation are apposite in addressing the above concern. Further, in depth analysis of similar studies across different regions covering many other related issues would emphasise the growing importance of mushroom as a regular vegetable. The extension research as well as extension service has a key role in spreading the mushroom cultivation technology as well as awareness about the importance of mushroom as a healthy and nutritious vegetable.

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