

Constraint Analysis in Mushroom Cultivation among Women Mushroom Cultivators in the State of Bihar, India

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Abstract

Mushroom cultivation is considered as one of the ample opportunities bearing occupations for mushroom growers specially for the women for their livelihood. Mushroom Training Centre in the DRPCA Pusa University is enthusiastically involved in conducting various training programs on mushroom cultivation. The main objective of the training program on mushroom cultivation is to promote mushroom cultivation as a self-employment venture to improve the socio-economic condition and livelihood of women mushroom cultivators. In this research work, we have discussed the present scenario and addressed the opportunities and challenges in mushroom cultivation among the woman mushroom cultivators. A total of 60 women mushroom growers from 4 blocks of district Samastipur, Bihar, India were selected as respondents.

The data and information obtained from respondents highlighted that a large number of respondents (98.33%) have faced lack of proper marketing channels and management. Majority of respondents (86.66%) reported that the mushroom cultivation process is a time consuming, wasteful, less profitable, low esteemed and cumbersome activity while 95 % of respondents expressed that mushroom cultivation marketing is generally dominated and exploited by the middlemen. The marketing constraint was among the most serious issue in mushroom cultivation together with lack of proper marketing channels, scarcity of quality spawn which are hampering the growth of this self-esteemed venture.

Keywords: Mushroom cultivation, training program, self-employment venture, mushroom cultivation marketing, marketing channel.

Introduction

Mushroom cultivation has been recognized as an important agricultural activity having a recognizable contribution to the economy of the country. This sustainable agriculture is adopted in more than 100 countries around the globe and the production is increasing with an annual rate of 6-7 percent.⁶ The temperate region of India is highly favorable for the cultivation of tropical and button mushroom while subtropical regions has variety of milky, oysters, paddy straw

and other species.^{5,8} Worldwide more than 2000 mushrooms have been identified as edible of which 200 types are reported to have been produced under controlled conditions. However, not more than 60 varieties are being grown widely.⁹

The button mushroom is the most popular variety of mushroom and highly preferred in domestic as well as export markets. Oyster mushroom commonly called 'Dhingri' is suitable for the temperate, subtropical and tropical regions of our country. Paddy straw variety is suitable for subtropical regions. Mushroom production technology is eco-friendly and is a labor-intensive activity.

It serves as a means of generating employment participation for rural women and youth to raise their social status.⁷ Mushroom is highly nutritious, therefore cultivation of mushroom can fulfill both commercial and nutritional demands of rural area specially to the poor farm women. Mushroom cultivation can also be done inside the house which makes it a landless farming activity, which is being practiced by the women specially among the rural and lower-income group (36%). As, it is a less strenuous activity, the involvement of small initial capital can be produced with the agricultural waste as substrate.³

The contribution of women to country's economy in the current context is of greater significance. Small and marginal agricultural labours are mostly benefitted by mushroom cultivation due to its profitable and sustainable nature. Agriculture is always not a profitable business for many farmers as they are not getting a good return due to several issues but parallelly such activities can enhance their income apart from the traditional field crops. Since mushroom cultivation needs very small piece of land, even can be grown in houses and huts, thus, people having limited or no land are interested in cultivation of mushroom as a venture of income generation.¹

Such a venture of income generation is highly promoted and funded by various departments, agricultural universities and funding agencies of the Government and private organizations. The research on the edible mushroom in Bihar State made its humble beginning in the Department of Microbiology, Faculty of Basic Science and Humanities, DRPCA, Pusa Samastipur in 1991 intending to generate profitable and sustainable production techniques. Women are also actively involved in conducting training programs on edible mushroom cultivation. Even, 'Mushroom Training

Centre' in the DRPCA University is imparting training programs for rural women so that mushroom production can be adopted on a large scale. The training programs of Pusa are multipurpose ones to cover not only the various needs of farmers but also the entire needs of the village and community.

However, it has also been observed that some of the women trained at the training center have adopted mushroom cultivation and on other hand, some have not. Thus, it is essential to analyse constraints which are faced by the trainees in mushroom cultivation to study the reasons for the continued adoption of mushroom cultivation as an enterprise of high income and better livelihood without much investment.

Material and Methods

The present study was conducted in Samastipur District of Bihar State. The two Blocks, Pusa and Tajpur were selected purposely.

Methods of sampling: From each block, two villages were selected from Pusa Block-Birauli and Kumra village and Tajpur Blocks- Shadipur and Rahimabad villages. Out of which Pusa block and Tajpur block had been selected for study purpose as large number of trainees are coming from these blocks and Dr. Rajendra Prasad Central Agricultural University is also situated in this block.

Selection of the respondents: Sample sizes comprised of 60 (sixty) respondents i.e. 15 respondents from each 4 selected villages. A respondent was elected by the snowball technique.

Tools and techniques of data collection: The data were collected by personal interview techniques through a structural schedule of constraints faced by farm women

regarding (a) Technical constraints (b) Economical constraints (c) Social constraints (d) Psychological constraints and (e) Marketing constraints.

Data analysis: Collected data were precisely tabulated, compiled and analyzed with the help of suitable statistical tools using several parameters like frequency, percentage and rank methods as far as objective of the study is concerned.

Results and Discussion

The socio-personal characteristics of women mushroom growers in Samastipur district were studied and the results are presented in table 1. It is very much desirable to know the demographic and socio-economic status of the respondents so that the finding of the study can be interpreted in the proper context to draw a valid inference. Data in table 1 indicated that a majority of the women mushroom growers 56.67 percent were young aged (28-38 years) followed by 31.67 percent and 11.66 percent respondents of middle age (39-49 years) and old-aged (50-60 years) respectively. This finding is more or less supported by Kaur.⁴ It is evident from table 1 that 60 percent of the women mushroom cultivators were under low income (Rs. 50,000-80,000), 35 percent had medium level income (Rs. 90,000-1,50,000) and the remaining 5 percent were getting very low income (below- Rs. 40,000).

It is observed from table 1 that 40 % of the respondents belong to the marginal farmers and small farmers followed by landless farmers that is 13.33 percent. 6.66 percent of respondents were for medium farmers. Similar results were found by Bharali.² Table 1 indicates that all the respondents of selected villages and selected respondents had got training. In table 1, it is observed that there was a cent percent of respondents who got training through various sources.

Table 1
Socio-Economic Profile of Women Mushroom Growers

S.N.	Particulars	Categories	Frequency	Percentage
1.	Age	Young (28.38years)	34	56.67
		Middle (39-49 year)	19	31.67
		Old (50-60 years)	7	11.66
2.	Family Income	Very low (below Rs.40,000)	3	5.00
		Low (Rs.50,000-80,000)	36	60.00
		Medium (Rs.90,000-1,50,000)	21	35.00
3.	Land Holding	Landless (No land)	8	13.33
		Marginal (Up to 2.5 acre)	24	40.00
		Small (2.5- 5 acre)	24	40.00
4.	Training	Yes	60	100
		No	-	-

N= Number of respondents

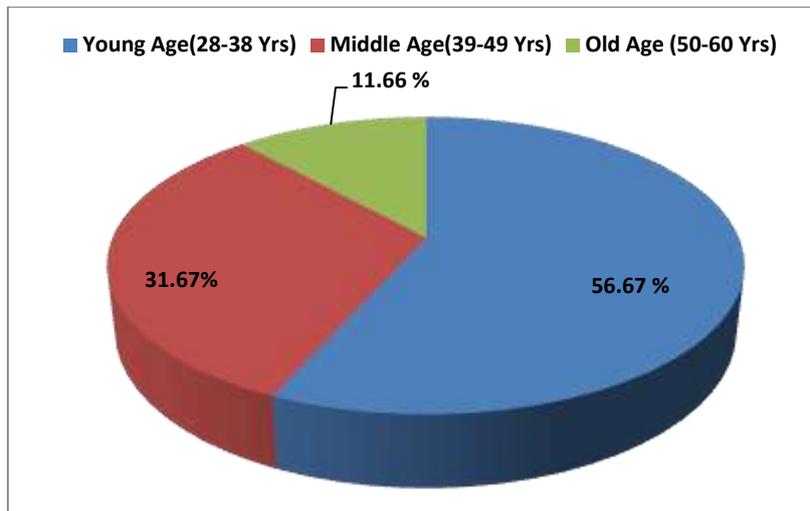


Figure 1: Percentage Distribution of Respondents According to their Age

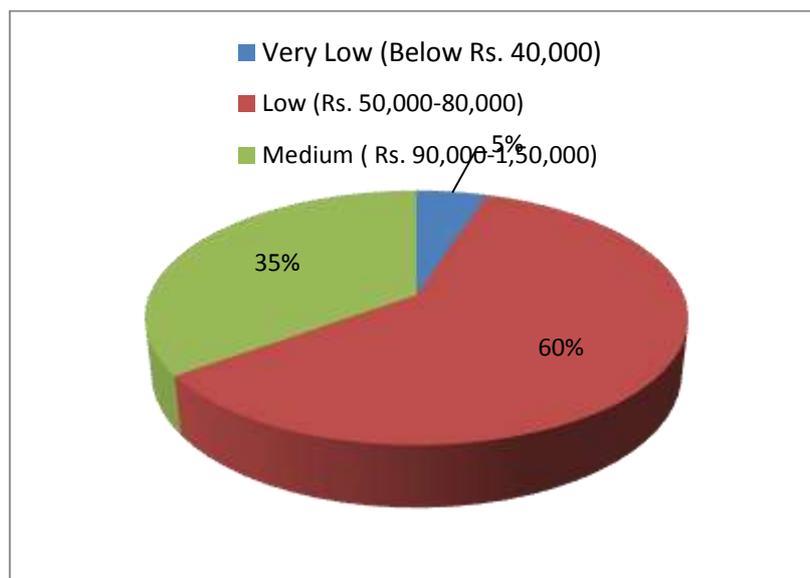


Figure 2: Percentage Distribution of Respondents According to their Family Income

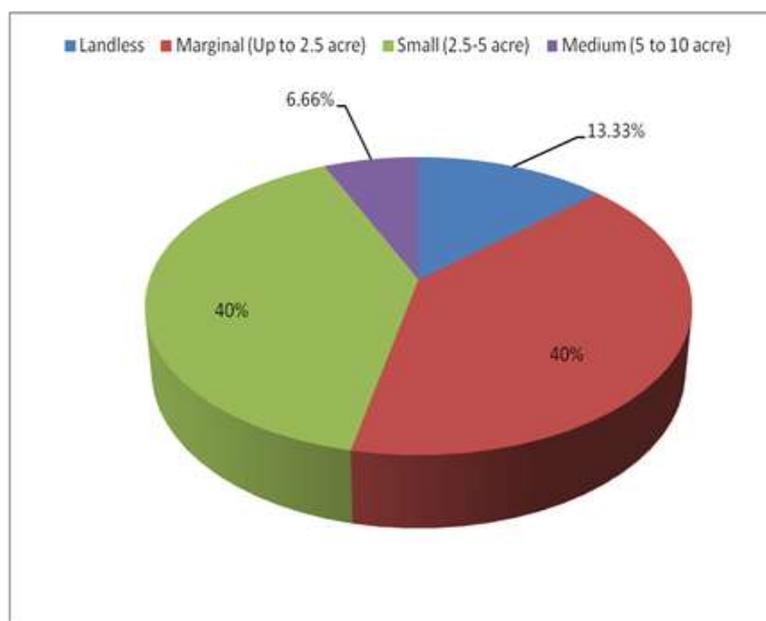


Figure 3: Percentage Distribution of Respondents According to their farm holdings

Table 2
Constraints of Mushroom Cultivation for their Livelihood

S.N.	Constraints	Frequency	Percentage	Rank	Overall rank
1	Technical Constraints				IV
	Production of mushroom is complex	3	5	IV	
	High labor requirement	4	6.67	III	
	Adequate maintenance	57	95	II	
	The lapse in moisture level and controlled temperature	59	98.33	I	
2	Economics Constraints				I
	High input costs are required	9	15	V	
	Lack of proper marketing channel	59	98.33	I	
	Less Profit	58	96.66	II	
	Cost of production	16	26.66	IV	
	Non-availability of quality spawn	42	69.72	III	
3	Social Constraints				V
	Lack of consumer awareness, motivation and low level of education	14	23.33	II	
	Low esteem, wasteful, cumbersome activity	52	86.66	I	
	Lack of awareness of mushroom training	8	13.33	III	
4.	Psychological Constraints				III
	Dual role of a housewife and a businessman	54	90	II	
	Unequal distribution of household works	50	83.33	III	
	A joint decision in the implementation of works	60	100	I	
5.	Marketing Constraints				II
	Lack of demand in the local market	52	86.66	III	
	Tough competition	6	10	VI	
	Lack of transport facility	12	20	V	
	Poor location of the shop.	16	26.66	IV	
	Fluctuation in marketing rate	55	91.66	II	
	Exploitation by middlemen	57	95.00	I	

N= Number of observations

One of the objectives of the study was to find out the constraints faced by respondents in mushroom cultivation. During the investigation, respondents expressed many reasons due to which they could not use recommended mushroom cultivation. The constraints were classified into: (a) Technical constraints (b) Economical constraints (c) Social constraints (d) Psychological constraints and (e) Marketing constraints. The data presented in table 2 pointed out that moisture level and controlled temperature were identified as technical constraints in mushroom cultivation. Together with this adequate maintenance is another requisition as mentioned by 98.33 and 35.00 percent of the woman mushroom cultivators respectively.

A large number of respondents (98.33%) pointed out that mushroom cultivation faced a lack of proper marketing channels and similar constraints were also reported by previous works^{7,8} that lack of appropriate market was the important constraint. Further, respondents (96.66%) got less profit. A majority of respondents (86.66%) reported that the mushroom cultivation process was time consuming, wasteful, less profitable, low esteemed and cumbersome

activity. It comes under the first rank of the constraints followed by 23.33 percent of respondents who perceived lack of consumer awareness, motivation and low level of education.

Analysis of data pertaining to the psychological constraints of respondents expressed the joint decisions in the implementation of work as cent percent. Further, a dual role as the most important problem in mushroom cultivation of a housewife and a businessman was perceived as the other constraints by the respondents (90%) and unequal distribution of household works was also reported as the problems by the 83.33% respondents.

A large number of respondents (95%) expressed dominance and exploitation by middleman involved in mushroom cultivation marketing followed by the respondents (91.66%) who reported that the fluctuations in marketing rate were also found to be important hurdles and this finding is supported by the previous research works.⁸ It has been highlighted the fact that women mushroom growers are not self-reliant for taking almost decisions regarding mushroom

cultivation which needs proper training regarding the empowerment of the decision ability of women. Economics constraints were found to be the most important constraints due to their high rank and predominance in this sector.

Conclusion

This study concluded that marketing constraint was among the most serious issue in mushroom cultivation. The study highlighted the issues related to the lack of proper marketing channels in the successful adoption of mushroom cultivation. This issue needs to be addressed as being a perishable commodity; lack of ensured marketing puts the growers at risk. The scarcity quality spawn in the local area and its inadequate supply at the appropriate time are hampering the progress of this venture.

Hence, the study is helpful in the growth of mushroom cultivation, designing and planning of proper agriculture management and providing a large scale market to the woman mushroom growers dealing with economic constraints

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References

1. Sailaja B and Radhika B., A Review on Production of Edible Mushrooms and Their Applications, *IJPBS*, **8(2)**, 265-283 (2018)
2. Bharali R., Economic Empowerment of Rural Women of Assam through Agro-based Enterprises, Assam Agricultural University, E-thesis, <http://krishikosh.egranth.ac.in/handle/1/93205>, (Accessed

on 27th November 2020) (2016)

3. Kala S., Sonam and Hansraj H., Impact assessment on socio-economic profile of women mushroom growers in Samastipur district of Bihar Impact assessment on socio-economic profile of women mushroom growers in Samastipur district of Bihar, *J. Pharmacogn. Phytochem.*, **9(3)**, 5-9 (2020)
4. Kaur K., Impact of Training Course on Knowledge Gain of Mushroom Trainees, *J. Krishi Vigyan*, **4(2)**, 1-54 (2016)
5. Kumar V., Cultivation of edible mushroom in india: precautions, opportunities and challenges, *J. Plant Dev. Sci.*, **7(5)**, 409-413 (2015)
6. Nnavar H., Ravishankar G. and Anandkumar V., Impact of Milky Mushroom Cultivation and Value Addition Trainings among the Unemployed Youth of Ballari District, *Int. J. Curr. Microbiol. Appl. Sci.*, **9(1)**, 1853–1860 (2020)
7. Singh M., Mushroom production: An agribusiness activity, In *Mushrooms, cultivation, marketing and consumption*, 1st ed., Manjit Singh G.W., Kamal Shwet and Vijay Bhunesh, ed., Solan, Himachal Pradesh, India, Directorate of Mushroom Research (ICAR), **1(1)**, 1-274 (2011)
8. Singh N., Mehta S., Godara A.K. and Yadav V.P., Constraints in Mushroom Production Technology in Haryana, *Agric. Sci. Dig.*, **28(2)**, 118-120 (2008)
9. Valverde M.E., Hernández-Pérez T. and Paredes-López O., Edible mushrooms: Improving human health and promoting quality life, *Int. J. Microbiol.*, **1(1)**, 1-15 (2015).

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