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PROBLEMS AND SUGGESTIONS REGARDING EXTENT OF IMPLEMENTATION OF SUGGESTED TECHNOLOGY FOR MUSHROOM CULTIVATION IN BHOPAL DISTRICT (MP)

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----------ABSTRACT----------
Sustainable agriculture and revenue creation could be achieved through the use of mushroom producing technology. It is still unclear how much of the suggested mushroom cultivation technology is being used by the growers in Madhya Pradesh's Bhopal District. The objective of this research was to pinpoint the primary obstacles impeding the extensive implementation of advised procedures and provide appropriate recommendations to address these issues. In order to evaluate the present practices and degree of technology use of mushroom growers in the Bhopal District, questionnaires and interviews were conducted as part of the research. The study identified a number of crucial problems, such as a lack of awareness and understanding of contemporary mushroom farming methods, poor access to extension and training programmes, and a lack of funding for the use of cutting-edge technologies. To start, focused awareness campaigns and training courses must to be set up to inform mushroom farmers of the advantages of implementing suggested techniques. The recommended treatments provide doable ways to improve technology adoption and encourage environment friendly methods of growing mushrooms. The region's mushroom growers may benefit from greater productivity, revenue diversification, and improved livelihoods if these recommendations are put into practice

KEY WORDS: *Mushroom, Sustainable agriculture, environment friendly, livelihoods and greater productivity.*

INTRODUCTION

The Indian economy is heavily dependent on agriculture, which accounts for 17% of GDP. Farmers work very hard to maximise production with limited resources, yet their revenue is still not very high. Farmers have the chance to use their time and resources for extra money and job prospects during the Kharif season, following the main crop's seeding. One such option is the cultivation of mushrooms, which allows for the additional revenue generation from rice and wheat waste products.

The ICAR-Directate of Mushroom Research, located in Solan, has been actively assisting new businesses in the mushroom industry by offering various training courses, technical demos, and knowledge transfers. The development of farmer-friendly technology and high-yielding varieties by this institute has been a major factor in the mushroom industry's expansion in India. Presently, 1.98 lakh hectares are used for mushroom production in India, yielding roughly 4.87 lakh tonnes of mushrooms a year. Even while this is a significant increase, China still produces 330 lakh tonnes of mushrooms annually, so it still lags behind.

For India, promoting the production of mushrooms has various benefits. Since mushroom cultivation is an indoor hobby and doesn't require agricultural land, it is appropriate for small farmers and labourers without access to land. Many agricultural wastes can also be used to create organic manure for field crops and high-quality food. Over 700 million tonnes of underutilised agricultural leftovers exist in India; mushroom growing has a great deal of potential to make greater use of these waste materials. India can produce roughly 15-20 lakh tonnes of protein-rich mushrooms, which can help fight malnutrition and create jobs for people living in rural regions, using only 1% to 2% of agricultural leftovers (Anonymous, 2022).

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Furthermore, compared to other field and horticultural crops, mushroom growing requires comparatively little area and water. This makes it an effective and long-lasting method of earning money from self-employment. Growing more and more, the mushroom industry offers a distinct agricultural activity that matches the demands of the nation and has many advantages for sustainability of the environment, livelihood, and nutrition.

METHODS AND MATERIALS

The study was conducted at Bhopal district of Madhya Pradesh state in central India. Bhopal district comprised of three blocks, viz; Huzur, Phanda and Berasia. Out of 3 blocks, Phanda and Berasia blocks were selected purposively as these blocks were maximum number of mushroom growers. From each selected blocks, 75 per cent respondents were selected by proportionate random sampling technique. Thus samples of 150 mushroom growers were prepared from Phanda and Berasia blocks.

RESULT AND DISCUSSION

Problems Faced by the Farmers

The highest percentage of respondents non availability quality spawn and substrates (65.33 %) followed by no marketing of mushroom in local market (61.33%), lack of technical guidance (58.67%) at par with people possess indifferent attitude towards mushroom (58.00), lack of proper marketing channels (56.67 %) was the most important problems which they face. Less knowledge about post-harvest handling (55.33%), spawn production is highly scientific and require more investment (54.00%), No storage facility (52.00 %), perishable nature of mushroom (50.67 %). Other problems which they face were, lack of government scheme for mushroom production (47.33%), less training duration (48.67 %) and Untimely availability of spawn (46.00 %). Similar findings was reported with earlier researcher Arora (2017), Roopa *et al.* (2016), Shirur *et al.* (2017), Karthick and Hamsalakshmi (2017) and Shipra *et al.* (2018).

Table-1: Distribution of respondents according to problems faced by them.

(N-150)

S. No.	Problems	Frequency	Percentage (%)
1	Non availability of quality spawns and substrates	98	65.33
2	Lack of proper marketing channel	85	56.67
3	No storage facility	78	52.00
4	Less training duration	73	48.67
5	People possess indifferent attitude towards mushroom	87	58.00
6	Spawn production is highly scientific and require more investment	81	54.00
7	Untimely availability of spawn	69	46.00
8	Less knowledge about Post-harvest handling	83	55.33
9	Perishable nature of mushroom	76	50.67
10	No marketing of mushroom in local market	92	61.33
11	Lack of technical guidance	88	58.67
12	Lack of government scheme for mushroom	71	47.33

Suggestions offered by the respondents

Majority of the respondents was suggested to arrange or provide proper marketing channel. The maximum suggestions were recorded for provide cold chain facility to avoid post-harvest losses (62.67 %) followed by availability of good quality of spawn and substrates (60.67 %), provide proper marketing channel (59.33 %), lack of support for mushroom enterprises for government side (57.33%), government must provide marketing facilities at village level for selling mushroom (55.33 %) at par spawn should be available easily and timely (54.67 %) awareness among the people may be created for its use and importance through demonstration, training etc. (52.67%), more focus on post-harvest technology i.e. grading, picking, canning etc. (51.67%), increase the duration of practical training (48.67%). About 46.00 per cent of the respondents suggested that create the government schemes and provide subsidies for mushroom cultivation. The findings are in linewith the study of Shirur *et al.* (2016), Karthick and Hamsalakshmi (2017), Dalmia and Kumar (2018), Kumari *et al.* (2018), Ranjitha *et al.* (2018) and Shipra *et al.* (2018).

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Table-2: Distribution of respondents according to suggestions offered by them (N-150)

S. No.	Suggestions	Frequency	Percentage (%)
1	Availability of good quality of spawn and substrates	91	60.67
2	Government must provide marketing facilities at village level for selling mushroom	83	55.33
3	Provide proper marketing channel	89	59.33
4	Increase the duration of practical training	73	48.67
5	Awareness among the people may be created for its use and importance through demonstration, training etc.	79	52.67
6	Spawn should be available easily and timely	82	54.67
7	Provide cold chain facility to avoid postharvest losses	94	62.67
8	Create the government schemes and provide subsidies for mushroom cultivation	69	46.00
9	More focus on post-harvest technology i.e. grading, picking, canning etc.	77	51.67
10	Lack of support for mushroom enterprises for government side	86	57.33

CONCLUSION

Problems Faced by the Farmers

The largest number of respondents stated that their biggest challenges include not having enough marketing outlets, followed by the lack of spawn availability, people's lack of interest in mushrooms, and inadequate instruction. Mushrooms are perishable, so there is a lack of storage facilities, a lack of knowledge about post-harvest handling, spawn production is highly scientific and requires more investment, a shorter training period, no local mushroom marketing, a lack of government funding for mushroom production, and a lack of technical guidance.

Suggestions given by the Mushroom Growers

The majority of respondents recommended setting up or offering an appropriate marketing channel. The other recommendations included making spawn readily available and promptly, raising public awareness of its value and application through demonstrations, training, and other means, setting up a cold chain facility to prevent post-harvest losses, putting more emphasis on post-harvest technology such as grading, picking, and canning, decreasing government support for mushroom enterprises, extending the duration of practical training, ensuring the availability of high-quality spawn and substrates, and requiring the government to establish government schemes and provide subsidies for mushroom cultivation.

Suggestions for Further Work

To reach more reliable conclusions, the study area might be expanded and a sizable enough sample size should be examined.

Due to the study's restricted use of dependent and independent variables, more research focusing on situational and infrastructure-related factors may be conducted.

The technologies for producing mushrooms that were suggested in this study were restricted. In the future, research might include a wider range of scientific procedures to further expand the study's reach.

More sophisticated statistical methods ought to be applied in order to enhance the contribution of various factors that may be given greater weight for investigation.

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