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ANALYSIS OF SCIENTIFIC REVIEWS ON MUSHROOM CULTIVATION ALLEVIATING FARMERS LIVELIHOODS

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ABSTRACT

This paper presents a review analysis on impact assessment and various constraint faced by mushroom growers. Planning and preparation are required when starting a mushroom production business. Farmers are often encouraged to receive training before beginning mushroom growing. However, the training facilities and resources available are insufficient. Hence from the study, it is observed that mushroom cultivation is a women friendly profession. Mushroom cultivation is one agricultural activity in which women may contribute significantly without compromising their household responsibilities. This study also identifies significant constraints faced by mushroom growers, such as "distantly located markets," "lack of government support," "non availability of quality spawns," "risk involved due to its perishable nature," and "lack of proper marketing channels," as the most significant constraints responsible for the low rate of mushroom farming adoption. Moreover to accelerate mushroom production, state departments must enhance capacity among mushroom growers by distributing improved low-cost cultivation technologies to women producers and providing them with high-quality spawn. Hence, there is also a need for spawn production unit at a very door step of the mushroom growers while enhancing low cost indigenous technological knowledge on spawn production.

Keywords: Mushroom production, constraints and impact assessment

INTRODUCTION

In India, 1.81 lakh tonnes of mushroom are produced each year, compared to 330 lakh tonnes in China. More than 700 million tonnes of agri-residue exist in India, however it is not used economically on a substantial basis. It is estimated that 1% to 2% of agri-residue is used. India has the capacity to produce roughly 15-20 lakh tonnes of protein-rich mushrooms, which would aid in the fight against malnutrition and provide employment possibilities in rural regions. Furthermore, compared to other field and horticultural crops, mushroom growing requires less area and water. Overall, mushroom farming necessitates exceptional business experience and leadership.

The oyster mushroom is one of the best fungi for making protein-rich meals from diverse agricultural wastes without the need for composting. Oyster mushrooms may be produced on the plains at temperatures of 32 to 38 degrees Celsius. Mushrooms, which are entirely vegetarian, are beneficial to diabetics. It has a variety of additional medicinal properties as well. It has a high fibre content and no sugar, making it beneficial for stomach-related disorders such as gastric ulcers. It's also a good source of protein. Mushroom growing has turned into a viable enterprise, with the product commanding high market prices.

Mushrooms come in three assortments: fresh, dried, and preserved. Because of its pleasant perfume, mild flavour, nutritional value, and unique taste, the mushroom market is quickly expanding. Soup, pickles, veggies, and other unique recipes are produced from them. It's also used for stuffing and garnishing a variety of dishes. However, consumption is still restricted to metropolitan and semi-urban areas. Mushrooms have a short shelf life after harvesting, hence they are sold fresh. They can be processed to extend their shelf life. Processed mushrooms are either canned or packaged in high-quality polythene bags. This cultivar can be sold in far-flung locations. The government of India has designated mushroom cultivation as a significant focus area. However, there is a massive market gap. All of the major hotels serve a mushroom dish. The demand for mushrooms is steadily increasing, indicating that there is significant market potential in the foreseeable future.

METHODOLOGY

A systematic review of the available literature on mushroom production, spawn production and value addition for marketing was conducted according to PRISMA (Preferred Reporting Items for Systematic reviews and Meta-analyses) guidelines, aiming to identify and characterize study methodologies, samples, variables and the data collections software used.

The electronic databases used were Web of Science, Researchgate.net and Academic Search Complete since they are relevant, credible, and representative and comprehensive was used. In addition to these databases, the Journal of Mushroom and medicine was adopted as a data source as it is a key magazine in the field. These databases were used to search for articles in peer-reviewed publications using the combinations of keyword “Mushroom production” with the following terms: "impact assessment" and "constraints”. To organize the results, the studies were grouped according to the major research topics of scientific reviews that emerged from the detailed analysis, and to the methodological strategies used.

RESULTS AND DISCUSSION

Out of 10 research papers collected, only the relevant 6 research paper was selected, from which 3 papers mentioned the impact of mushroom cultivation in sustaining livelihood and 3 papers for constraints responsible for low rate adoption of mushroom farming.

In the current scientific review, the articles were initially grouped according to aims, variables, methods and results obtained. It was decided that the most appropriate way to present the results would be to categorize them into two levels of analysis, depending on the type of analysis performed; impact assessment (3 articles) and constraints (3 articles).

Table - 1 Scientific reviews analysis on impact assessment of mushroom production on livelihood sustainability.

Author's Name	Aim of study	Sample/Variables	Statistics/Software	Result
Kulvir Kaur (2016)	Impact of Training Course on Knowledge Gain of Mushroom Trainees	Eighty five trainees were selected which was given training on mushroom cultivation by conducting two vocational training course. A pre test was conducted to know the level of knowledge of participants regarding variety, diseases of mushrooms as well as their storage and preservation etc. Similarly, after completion of the training course, post evaluation was performed in order to assess the knowledge gained by the trainees and effectiveness of training.	Descriptive statistical tools were employed to analyse the results. The data were analyzed using frequency, percentages and ranking	The majority of respondents attended in the training course to pursue mushroom growing as a career, with only 10.5 percent attending only to obtain a certificate of completion. For diseases of mushrooms, their prevention, and mushroom variety, the highest gains in knowledge (94.1 % and 92.9 %, respectively) were noticed. The study concluded that effective training provides learners with the information and advice they require to establish and grow a business.
Dalmia and Kumar (2018)	Aims to investigate the change in economic status / profile of rural women entrepreneurs after entering in oyster mushroom cultivation.	Sixty trainees were imparted training on mushroom cultivation by conducting three vocational training courses at Krishi Vigyan Kendra, Lodipur, Arwal. This study was conducted in the three schedule / backward caste dominated mahila kisan club formed by KVK, Arwal at Muradpur huzra, Korium	Descriptive statistical tools were employed to analyse the results. The data were analyzed using frequency, percentages and ranking	Attending a training programme boosted the knowledge level of farm / rural women. This investigation's findings also revealed that women who began mushroom farming began to make a substantial amount of money. Sales at public gatherings, marketplaces, and house-to-

		and Bara of Arwal district of Bihar by the instruction of Directorate of Extension Education, B.A.U., Sabour, Bhagalpur.		house sales were all used as marketing techniques for the items.
Sonam *et al*, (2020)	Impact assessment of mushroom cultivation on livelihood of women mushroom growers of Samastipur District of Bihar	The study was conducted in Samastipur district of Bihar. Two blocks namely Pusa and Tajpur of identified District were selected for the study. Out of selected blocks four villages were purposely selected. A sample of 60 respondents i.e. 15 from each village selected with the help of snowball sampling technique. Data were collected using personal interview method with the help of structural interview schedule and thereafter, data were analysed.	Coefficient of Correlation	The analysis of results reported that education (0.665**), income (0.754**) and land holding (0.582**) were found to be significant with livelihood of mushroom growers at 1 percent level of probability. In a nutshell, it was determined that the long-term viability of mushroom farming techniques will economically empower women while also making them self-reliant and self-assured, all of which will enhance women's livelihoods.

Table - 2 scientific reviews analysis on mushroom production according to constraints faced by mushroom growers.

Author's Name	Aim of study	Sample/Variables	Statistics/Software	Result
Gautam *et al.*, (2014)	Aim of the study was to understand the constraints faced by KVK trainees that pose hindrances in adoption of the mushroom entrepreneurial ventures.	The study was conducted in Haidergarh block of Barabanki district of Uttar Pradesh selected purposively due to the presence of Krishi Vigyan Kendra. Fifty trained respondents were selected randomly who were trained by KVK in mushroom cultivation. The structured schedule	Descriptive statistical tools were employed to analyse the results. The data were analyzed using frequency, percentages and ranking	Study revealed that 'lack of proper marketing channel' was the most important constraint responsible for low rate of adoption. 'Distantly located markets' and 'lack of government support' were the other major obstacles in this process. 'Non availability of quality spawns' & 'risk involve due to perishable nature' were also observed as

		was developed. To analyze the constraints related to mushroom entrepreneurs, a list of all possible problems under socio-psychological, economical, technological and marketing areas was prepared after consulting the scientists, extension workers, research workers and farmers.		constraints by the mushroom growers.
Shirur *et al.*, (2016)	Study was carried out to assess component wise technology adoption and constraint analysis of enterprises in order to suggest precise policy interventions for bringing the mushroom industry to health and vibrancy.	The research was conducted among the mushroom entrepreneurs in Karnataka State. Sixty respondents growing mushroom for a year or more were interviewed and data was collected through a pre-tested schedule.	Descriptive statistical tools were employed to analyse the results. The data were analyzed using frequency, percentages and ranking	The constraint analysis reveals that, non-availability of spawn, lack of technical information and exploitation by consultants are major constraints. The increasing labour wages calls for adoption of mechanization in various activities of mushroom cultivation. The higher cost on electricity has rendered the cultivation of button mushroom less profitable in the State.
Kumari *et al.*, (2018)	Aims to investigate the adoption level and constraints in scientific mushroom cultivation among rural women.	The present study was conducted in Deoria district of Uttar Pradesh state. Out of sixteen block of Deoria district three blocks i.e. Bhatni, Salempur and Bhatparrani were selected purposively for this study, from each	The data were collected, tabulated and analyzed to find out the findings and drawing the conclusion. The statistical tools like frequency, percentage and rank were employed to analyze the data.	Study had revealed that lack of proper marketing channels was the most important constraints responsible for low rate of adoption, 'Distantly located markets' and 'lack of government support' were the other major constraints in this process. 'Non

		block three villages were selected purposively for the study. Among each village 10 farm women were selected randomly. Hence total sample size was 90 women. The data were collected through personal interview method.		availability of quality spawns and risk involve due to perishable nature' were also observed as constraints by the mushroom growers.

SUMMARY AND CONCLUSION

Planning and preparation are required when starting a mushroom manufacturing business. Farmers are often encouraged to receive training before beginning mushroom growing. However, the training facilities and resources were insufficient. Hence from the Table 1 it can be seen that mushroom cultivation is a women friendly profession. Mushroom growing is one agricultural activity in which women can play a vital role without sacrificing their household responsibilities. And from the Table 2 it can be observed that important constraint faced by mushroom growers was 'distantly located markets', 'lack of government support', 'non availability of quality spawns', 'risk involve due to its perishable nature', lack of proper marketing channels were the most important constraints responsible for low rate of adoption of mushroom farming.

Further, it can be concluded that for mushroom cultivation to pick up the pace, capacity building of mushroom producers is required, including the dissemination of improved low-cost growing technologies to farmers and the provision of high-quality spawn by state agencies. As a result, there is a need for research and policies connected to establishing a spawn production unit at the mushroom producers' doorstep while strengthening low-cost indigenous spawn production knowledge.

REFERENCES

Dalmia, K., & Kumar, R. (2018). Impact assessment of vocational mushroom cultivation training programme on knowledge gain of rural women. *Int JPure and Appl BioSci*, *6*(3), 265-270. http://dx.doi.org/10.18782/2320-7051.6505

Gautam, A. K., Singh, P., Mishra, D., Kumar, A., & Singh, A. P. (2014). Constraints in adoption of mushroom production enterprise. *The Indian Society of Extension Education*, *50*(1and2), 39-41.

Kaur, K. (2016). Impact of training course on knowledge gain of mushroom trainees. *Journal of Krishi Vigyan*, *4*(2), 54-57. http://dx.doi.org/10.5958/2349-4433.2016.00013.1

Kushwah, S., & Chaudhary, S. (2016). Adoption level and constraints in scientific oyster mushroom cultivation among rural women in Bihar. *Indian Research Journal of Extension Education*, *15*(3), 11-16.

Pattnaik, T., & Mishra, S. (2008). Constraints in adoption of mushroom cultivation technology. *Asian Journal of Home Science*, *3*(1), 86-89.

Rachna, R. G., & Sodhi, G. P. S. (2013). Evaluation of vocational training programmes organized on mushroom farming by Krishi Vigyan Kendra Patiala. *Journal of Krishi Vigyan*, *2*(1), 26-29.

Rajni, G., & Sodhi, G. P. S. (2014). Risk assessment in adoption of mushroom cultivation as a subsidiary occupation. *International Journal of Farm Sciences*, *4*(4), 279-286.

Sharma, K. (2018). Mushroom: Cultivation and Processing. *Int. J. of Food Processing Technology*, *5*(2), 9-12.

Singh, N., Mehta, S., Godara, A. K., & Yadav, V. P. (2008). Constraints in mushroom production technology in Haryana. *Agricultural Science Digest*, *28*(2), 118-120.

Sonam, S. K., Hans, H., & Bisen, J. (2020). Impact assessment of mushroom cultivation on livelihood of women mushroom growers of Samastipur District of Bihar. *J Pharmacogn Phytochem* 9(2S):251-253.