

Role of Media in Mushroom Cultivation

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How to cite this article:

Arpita Sharma Kandpal, Akansha Joshi/Role of Media in Mushroom Cultivation/J Soc Welfare Manag. 2022;14(1):25–30.

Abstract

Human population is increasing from past years till now; on comparing from the data available World population has increased to seven folds in the duration of past two centuries. This leads to put an extra pressure on nature and available natural resources. The population explosion is one of the effect of improved health services that has decline the mortality rate significantly. Media play very important role in dissimulation of information related to mushroom cultivation. Present paper aim is to discuss the status of mushroom cultivation in India and role of media in Mushroom Cultivation.

Keywords: Mushroom Cultivation; Print media.

INTRODUCTION

Agriculture being one of the basic practice and necessity of human from the ancient time. To sustain the resources for future scenario one has to switch our farming practices from conventional to 'Sustainable Intensive Agriculture'. **Rockstrom et al. (2017)** suggested that to mitigate the environmental shift and increasing population demand the only way is to integrate sustainable agricultural practices for eradication of poverty and hunger and to fill the cleft between the

different economic classes along with contributing to reliance with sustainability of the ecosystem.

According to the World Bank 3/4th of Indian population depends on rural economy. About 70 percent of India's BPL population are its rural residence. When we took a look on nutritional aspect came across the fact that after green revolution food security is achieved to certain extent, but according to FAO, (2018) about 190 million of Indian population are malnourished. This shows that there is huge nutritional gap to cover.

INDIAN AGRICULTURE SCENARIO

Agriculture sector supports 58 percent of the population and the contribution of agriculture and allied sector to the Gross Domestic Product (GDP) is 19.9. **Economic times (2020-2021)**, **Ranjitha et al. (2018)** stated that majority of the trainees (62 percent) were of young age (less than 30 years) followed by medium aged (31 to 50 years). He also concluded that 78 percent of the trainees belong to rural background. Total 70 percent of Indian rural house

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Received on: 21.04.2022

Accepted on: 23.05.2022

hold depends on agriculture as primary source of livelihood. Out of total farming community 82 percent of them are marginal or small landholding farmers. Gross Value Addition of agriculture and allied sectors, the share of agriculture in total economy of country shows the increasing trend. According to **The Hindu Business line (2020)** data retrieved, it raises from 17.6 percent in 2018-2019 to 20.2 percent in 2020-2021. As stated in their headline that current growth rate of farming and allied activities is 3.4 percent. To encourage farmers and farming community Government of India set up an inter-ministerial committee to analyze the farmers problem and the factor hindering their economic upliftment. For this cause first step may be identifying the beneficiary i.e. farmers, categorizing them in different income category, analyzing the field situation and spotting the causes of their low income and then formulation of a plan to overcome the situation. **Kumar and Chahal (2018)**, reported that 70 percent of Indian farmers have per capita income less than Rs 15,000 with landholding less than 1 hectare. **Alfred et al. (2012)** found that 60 percent of mushroom producer were male followed by females. About 44 percent of respondents belong to young age group (26 to 35 years) followed by middle age group (36 to 50 years). **Tannin et al. (2012)** concluded that majority of the respondents 67 percent were middle aged followed by 76 percent of the beneficiaries were either secondary level qualified or with higher qualifications. **Sirur et al. (2017)** reported that nearly 50 percent of mushroom growers were of young age followed by 37 percent growers of middle age and 15 percent growers were in their old age. **Kwamekavi (2018)** found that majority of the respondents (89.8 percent) took co-farmers as a major information source. **Ranjitha et al. (2018)** stated that majority of the trainees (62 percent) were of young age (less than 30 years) followed by medium aged (31 to 50 years). He also concluded that 78 percent of the trainees belong to rural background. **Singh et al. (2018)** found that economic profits can be harness by women through oyster mushroom cultivation in a well functioning SHG in the hilly regions of Uttarakhand. **Agymenet (2019)** concluded that 73 percent of the respondents were of medium knowledge level, 17 percent of them were of high knowledge level and 10 percent of the were of low knowledge level about oyster mushroom cultivation. Majority of the respondents in the study showed high acceptance level (78.6 %) of the idea. **Hatai et al. (2019)** found that 65 percent of the respondent belongs to middle age group (36-50 years) while the people with younger age group show minimum interest in farm related activities.

Kanimozhi et al. (2019) found that around 33 percent of the respondents were of (21-30 years). Major attraction of the respondents toward mushroom cultivation was its high demand in market and high profitability of the venture. **Sharma et al. (2021)** found that all the farmers involve in mushroom were small and landless farmers. The literacy index of the mushroom growers studied was found out to be 2.69. **Odidiran et al. (2020)** stated that majority of the farmers 71.1 percent are middle aged (30-50 year) followed by 1 to 5 years of experience in the field. Only 10 percent of farming community earns more than Rs 30,000. The four point action plan of NITI aayog for Doubling Farmers Income i.e. Remunerative price for farmers by reforming the existing market structure, Raising productivity, Reforming agriculture policy and Relief measures. **According to State Specific Strategy for Doubling Farmer Income (2022) ICAR**, this strategy aims to strengthen the farming and allied sectors by reformative steps which targets intensification of agriculture via (a) diversification (b) value addition of the output (c) strengthening the agricultural infrastructure etc. Some points that by the policy makers are improvement in livestock productivity, resource use effectiveness or saving the cost of production, increase in cropping intensity, diversification toward High value crops, improvement in retail prices received by the farmers, shift from farm to non farm occupation. Non farm occupation as dairy, poultry, apiculture, mushroom production, piggery, sericulture and fishery.

Global scenario of Mushroom Cultivation

Global market is witnessing the increasing trend for mushroom as a commodity due to shift in consumer's choice from animal protein to mushroom. Mushroom being highly nutritious food and raising health consciousness is increasing the demand of such nutritious food. Thus, mushroom becoming popular and familiar face in developed and developing market. As per reported by **Fortune Business Insight (2020)** Global mushroom market size was valued at 46.1 billion in 2020 and is expected to grow at CAGR (compound annual growth rate) of 9.5 percent from 2021 to 2028. Asia Pacific is the leading region in Global market with 10.26MT volumetric consumption of mushroom.

Indian status of Mushroom Production

According to **APEDA (Agriculture and Processed Food Products Export Development Authority)** India is in 70th position in top 100 countries to export Button mushroom (*Agaricus spp*) fresh

and in 30th position among top 100 countries to export Agaricus preserved other than vinegar or acetic acid. Total 1427.00 kg mushroom of Genus Agaricusis exported of worth Rs 2268512.00

Uttarakhand Status of Mushroom Production

According to **horticulture and floriculture sector profile of Uttarakhand (2017)**, state has reached to 13000 MT of mushroom outcome.

GOVERNMENT STRATEGIES FOR MUSHROOM GROWERS

Mukhyamantri Swarojgar Yojna

Under the schemes as Mukhyamantri Swarojgar Yojna, Nano enterprises are being supported by Government such as bakery, electrician, mobile repair, vegetable production etc. Mushroom cultivation is one of the field that has to be supported through above scheme. Under this scheme 25 percent subsidy will be provided to the beneficiary. Marginal and small farmers will be given loan without interest.

Horticulture mission for North East and Himalayan States

Horticulture mission for North East and Himalayan States, mushroom growers are given free trainings and kind help in form of raw material and information through experts. After all the efforts and the resources endowed to the locale the area is still far from satisfaction in terms of quality and quantity of the mushroom grown by the inhabitants. The causes for poor performance in mushroom harvest are lack of knowledge about the subject and the technical know how of the production unit, lack of funds and infrastructure, and most importantly lack of knowledge about market dynamics.

Uttarakhand is the state in Himalayan belt. The state has total 53, 483 sq. km. Out of which 86.07 percent area is hilly and rest 13.93 percent area is plain region. The plain area of the state has highly fertile and productive land whereas hilly region of the state have challenges as soil erosion, no or less irrigation facilities and fragmented land for cultivation. Uttarakhand has a huge and unwind potential for mushroom production as its climate cold and humid support the mushroom growth and development. (**State specific strategy, 2022**). Due to low and fragmented land holdings and distressed economic conditions, farmers are unable to invest and harness the potential fully. According to

statistical data provided in state website around 77.6 percent of farmer's in states are with landholding less than 1 hectare. About 1/3 of state population is of age group 15-34 year which is forced to migrate. (**Statistical abstract Uttarakhand 2015-2016**). **Mishra (2008)** concluded that trainees are interested in value addition of the mushroom, some other topics that interests the trainees were information about quality spawn, cultivation manual and crop insurance. **Mehta et al. (2011)** stated that due to high moisture content and highly perishable nature of the mushroom, there's a urging need for extending the shelf life of harvest by using appropriate, affordable and acceptable post harvest and value addition technology for mushroom. **Banga et al. (2013)** revealed that farmers were highly in need of proper transportation facility from farm to market for the mushroom harvested. **Rachna et al. (2013)** stated that about 45 percent of the respondents are interested in topics as certified spawn and how to avail that. **Yusuf et al. (2013)** stated that farmers are eager to know about various income sources in rural surrounding to eradicate the poverty within the society. **Gautham et al. (2014)** found that farmers involve in mushroom cultivation are in need of technology to handle perishable nature of the mushroom and knowledge about proper marketing channel and reliable source of quality spawn. **Chauhan et al. (2016)** stated that in present scenario farmers require information related to market as commodity prices, market intelligence etc. rather than on other topic as crop management. **Shirur et al. (2016)** stated that Mushroom trainee look for more practical session, mushroom growers are eager to know about the subside he/she can avail, about the market dynamics of the mushroom and the marketing channels for their product. **Febrianda et al. (2017)** found that needs of mushroom farmers can be categorized in two groups; (a) technical part, this deals with attracting the customers in market and strategies to increase yield and productivity (b) organizational part, this deals with fulfilling the market demand for the produce **Sonam et al. (2021)** found that majority of the women mushroom growers from Samastipur, Bihar are keen to know about market dynamics and structure. According to **Karthik and Hamsalakshmi (2017)**, Mushroom Farming as an income source is helpful to stop migration. **Kumar et al. (1995)** concluded that in Uttarakhand hills intensive mushroom cultivation can lead exponential growth in mushroom growers economic status as this unit requires very less amount of land for establishment and inputs are locally available with low cost and output fetches a great monetary value. Constraints

faced by mushroom growers are mainly lack of technical know how and lack of marketing channels. Other constraints can be lack of availability of spawns, compost etc. (Shirur *et al.* 2016). The ratio between extension workers and farmers is quite wide (1:1000) due to which information gap prevails. Print media being cheap, flexible, portable, and independent of other resources can prove itself an better alternative. The crux of grass root media production for development is need assessment, message designing and information use through proactive participation. Thus, it's important to seek for a participatory approach to design message and module with the involvement of local people. As per State Agriculture Plan (2017) authorities are planning to expand the mushroom cultivation and mushroom market in the state for year round cultivation and availability of mushroom (specifically button mushroom and oyster mushroom) in market.

COMMUNICATION AND MEDIA IN AGRICULTURE

To fulfil the Government plans and strategies, extension agencies, communication channel and related personnel's come into focus. As the extension workers and target audience ratio is wide apart i.e. 1:1000. Media to great extent serves to bridge the existing gap of extension workers to the beneficiaries. At present, local people are exposed to many media platforms and can access information through variety of communication channels as radio, television, newsletter, magazine, internet through different electronic devices as computer and smart phones etc. Print media plays an important role in information dissemination at grassroot level in every sector of development be it educational, institutional, industrial, economic field, agricultural field etc. Mowlana and Wilson (1988) stated that most of the communication and development efforts depend on print material. Readers attitude and perception is deeply influenced by print media they exposed to. Farooq *et, al.* (2007) found that all the respondents are exposed to print media for farm related information followed by other sources of information as radio, television, fellow farmers etc. Newsletter is a form of print media containing news and information about concern activity or topic. Some examples of print media in agricultural sector farm magazine as Indian Farmer's Digest, Agriculture Today, Agriculture and Food (e-News letter), Agriculture and Environment, Krishi Jagran, Kheti etc. Although limited work has been done in

the field but few examples are (a) Standardisation of training module on Mushroom cultivation Technology by Shirur *et al.*(2019), (b)An effective training in oyster mushroom cultivation in tropics Sanyogita *et al.*(2000) etc. Mody (1991) reported that needs of audience should be directed towards designing the media message popular. The more the message designer tailor their production to the information needs of their diverse mass audience using an accent of the audience, better the chance of communicating and behavior change. Vijayaran *et al.* (2005) reported that after training need assessment (TNA) via task analysis and self assessment successful training module were developed using steps as (1) Sequencing the skills and topic of various fields (2) Statement learning and input output analysis. (3) Strategies formulation to achieve the expected output. (4) Development of instructional module. (5) Validation of the project. David *et al.* (2008) stated that farmers lack resources and capability to access the technical information of their interest. It is best to involve beneficiaries in designing the training module to avoid any confusion related to symbols and language used. Papnai (2008) in a study proposed a model of designing and development of participatory wall newspaper with steps as (1) Rapport building. (2) Need assessment. (3) Need prioritization of local people (4) Identification of problem (5) Ensuring participation of local persons at each step of media production (6) Selection of media according to the respondent (7) Development of content with people participation (8) Presentation of media (9) Evaluation. Yadav (2008) followed four steps while designing training module. These are grouping the training needs, formulation of learning objectives, and determination of content and organization of the course contents. Collett and Gale (2009) reported that training module should be made after understanding the barriers women face in accessing and utilizing training. Muria *et al.* (2017) concluded that to design an effective learning module needs of learner, interest of beneficiaries, education and other perspective of the learner should be considered as an important note. Bishnoi *et al.* (2019) found that over the seven validation points for module applicability was ranked first followed by learning and support, content, visual design, motivate to learn, perceived utility and lastly navigation, accessibility, interactivity and learn ability was ranked. Martey *et al.* (2021) stated that for develop ing training module different approaches are being collaborated such as practical field demonstration with formal adult learning with extension officer as the reliable and credible

source of agriculture related information. **Swangla et al. (2021)** found that over the validation points proposed for the module developed, content and design was ranked first followed by utility, ease to understand and ability to satisfy the felt need of the beneficiaries was ranked last. **Mody (1991)** reported that Steps of Participatory Message designing are: (1) Learn everything about the topic (2) Analyze lifestyle and preference of the audience (3) Assess audience needs (4) Write specific and measurable goals (5) Forming creative persuasive strategy (6) Write message specification (7) Pretest (8) Modify message and proceed with mass production (9) Monitor exposure (10) Collect impact data (11) Feedback. Mushroom farming is one of the potent sources of income generation for landless farmers or farmers with low landholding. Mushrooms are commonly known as fruiting bodies of fungus (basidiomycetes) which may be edible or poisonous. **Changs and Miles (1992)** defined mushroom as "macro fungus as distinctive fruiting body which can be seen by naked eyes and can be picked with hands." Mushrooms are higher fungus with specific palatable property thus are cultured for economic purposes. Due to limited resources, for upliftment of rural community there's the need for low cost input and maximum profit plans, Mushroom cultivation is the venture with minimum input and maximum output. Currently, mushroom cultivation is largely an urban or semi urban affair. When the technology is promoted and adopted in rural region, the results will turn more profitable as the agri-residues will be utilized as the input for the venture. According to annual report, **ICAR-DMR 2019**, with the support of entrepreneurial activities in mushroom cultivation through various technology transfer and various training activities are organized. As the result of the different approaches to attract target population, in the last five year mushroom production in India has almost doubled from 1.00 lakh MT to 2.01 lakh MT.

Mushroom cultivation is the process of cultivating the mushroom artificially for commercial purpose. This is one of the agricultural activities with negligible effect of biotic and abiotic stress. On comparing the benefit cost ratio, the figure proves that the final harvest is with high monetary value. Economics says that total cost calculated for mushroom production per unit was Rs 44,823 and the Gross income was Rs 1, 35,000 hence there was a profit of Rs 90,000 per respondent. Thus, it shows two times increase in economy of the participants.

Thus, we can say that mushroom cultivation is very important area for the development of

farmers. Media play a very important role to provide information to the mushroom cultivators.

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