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Value Addition of Oyster Mushroom Products for Promoting Farmer's Economic Empowerment

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The present study focuses on the value addition of oyster mushroom products for promoting farmers' economic empowerment. Oyster mushroom is a highly nutritious food with significant medicinal and commercial value; however, its short shelf life limits its market potential. Value addition through processing into products such as mushroom soup, biscuits, pickle, jam, nuggets, soup powder, ketchup, dehydrated mushrooms, and other ready-to-use products can enhance shelf life, improve marketability, and increase farmers' income. The study was conducted in Rajnandgaon district of Chhattisgarh during 2024–25 through field visits, farmer interaction, surveys, demonstrations, and awareness programmes to assess farmers' knowledge and promote value-added mushroom products. The project highlights the importance of mushroom cultivation as a sustainable enterprise that utilizes agricultural waste efficiently while generating employment opportunities for rural youth, women, and small-scale farmers. The findings indicate that value addition not only reduces post-harvest losses but also creates better marketing opportunities and supports rural entrepreneurship. The study further emphasizes the need for technical guidance, quality spawn availability, financial assistance, and improved marketing infrastructure to strengthen mushroom-based enterprises. Overall, value addition of oyster mushroom products has considerable potential to improve farmers' livelihoods, promote sustainable agriculture, and contribute to rural economic development.

Keywords: Oyster Mushroom, Value Addition, Farmer's Economic Empowerment, Rural Entrepreneurship, Sustainable Agriculture, Shelf Life Enhancement.

Introduction

In India, mushroom production systems are of mixed type, including seasonal farming as well as high-tech industry. Mushroom production in the country started in the 1970s. With the development of technologies for environmental control and better understanding of cropping systems, mushroom production increased considerably. Button and oyster mushrooms are among the commercially grown species, followed by other tropical mushrooms such as paddy straw and milky mushrooms. Oyster, paddy straw and milky mushrooms are grown in tropical and subtropical areas. The project report states that mushrooms possess significant

health benefits and medicinal properties. Mushroom cultivation is also described as an opportunity for empowerment of rural and urban women through cultivation and production of value-added products. Cultivation of edible mushrooms is a biotechnological process for conversion of lignocelluloses organic waste. Mushrooms are rich sources of proteins, vitamins and minerals. Oyster mushroom is considered a nutrient-dense food and can be used as a substitute for meat, fish, fruits and vegetables. In India, interest in mushrooms has increased because of their nutritional value as well as the presence of medicinal active compounds. The project report further describes mushroom cultivation as a means of converting agricultural and forest wastes into useful matter and reducing environmental pollution. The report emphasizes that the mushroom trade mostly focuses on fresh products, whereas greater attention can be given to value-added products. Mushrooms have high moisture content and delicate texture, which results in limited keeping quality. The report states that mushrooms can be value-added at different levels, ranging from grading to prepared snacks or meals. Value-added products mentioned in the report include biscuits, nuggets, preserves, noodles, papad, candy and soup.

Value addition is therefore presented in the project as an important approach for improving the utilization of oyster mushroom. Different products can be prepared from oyster mushroom, including soup, biscuits, pickle, jam, nuggets, soup powder, mushroom powder, ketchup, dehydrated mushroom and mushroom badi. Such products provide different forms of utilization of mushroom and are discussed in the project as products suitable for value addition. The project further states that the scope of mushroom production in Chhattisgarh is broad and that oyster mushroom is cultivated extensively throughout the year. Small-scale mushroom farming provides opportunities for farmers and small entrepreneurs without much land, capital and technical knowledge. It also provides income opportunities for landless people, rural women, adolescents and physically disabled people and can generate employment through development of mushroom-based industries.

Fig: Common Marketable Value-Added Products of Mushroom

Related Work / Literature Review

S.T. Chang (2006) S.T. Chang discussed mushroom research and development and the mushroom industry. The literature highlighted that the mushroom industry includes edible mushrooms, medicinal mushroom products and wild mushrooms. Mushroom production worldwide was reported to be increasing, supported by technological developments in cultivation, production capacity and final mushroom products. The nutritional and medicinal benefits of mushrooms were also discussed.

Sarkar, Md. Rasheduzzaman (2014) Sarkar studied the economics of value-added mushroom production and marketing channels in Dhaka district. Primary data were collected from farmers, market agents and consumers. The study reported that mushroom production was profitable and that demand for fresh mushrooms was increasing. The reported benefit-cost ratios for fresh mushroom, dried mushroom and mushroom powder were 1.66, 1.28 and

1.31, respectively. The mushroom value chain included input suppliers, producers, traders, processors and consumers. The study also suggested financial facilities, training, good-quality spawn and greater consumer awareness.

B.K. Singh (2019) B.K. Singh described mushrooms as nutritious, medicinal and functional foods but identified their short shelf life as a major constraint. The mushroom value chain was classified into input suppliers, producers, traders, processors and consumers. The literature emphasized the need to convert fresh mushrooms into more durable products and identified several value-added products, including soup powder, pickles, chips, paste, ketchup, noodles, pasta, biscuits and nuggets.

M.P. Thakur (2020) M.P. Thakur described mushrooms as an excellent source of nutrition and highlighted their potential as dietary and medicinal foods. Mushrooms are rich in crude fibre, protein, vitamins and minerals while containing low levels of fat and calories. The study also highlighted mushroom cultivation as a means of recycling agricultural waste and producing nutritious food. Value addition was identified as an approach to improving product variety and shelf life. Furthermore, mushroom cultivation was recognized for its potential contribution to employment generation, food and nutritional security, and medicinal applications.

Singh, I.P. (2024) Singh, I.P. described mushroom farming as an opportunity for youth empowerment because of its high-value output, limited land requirements and potential for socioeconomic transformation. The review discussed the economic, environmental and social outcomes associated with mushroom cultivation and identified challenges and opportunities related to mushroom farming.

Mukhamat Saini (2024) Mukhamat Saini studied oyster mushroom cultivation as a tool for economic empowerment in Garu Village using the Asset-Based Community Development framework. Data were collected through participant observations and interviews. The findings indicated improvements in participants' ability to cultivate and market oyster mushrooms, increased sales and enhanced community participation. However, marketing strategies and production quality remained important challenges.

B. Latha Shankar (2024) B. Latha Shankar studied the existing mushroom value chain, demand–supply gap and associated challenges in Tumakuru Taluk, Karnataka. Data were collected from 71 actors in the oyster mushroom value chain. Five different value-chain models were identified, and the shortest value chain was found to be the most profitable. Mushroom cultivation was reported to offer opportunities for employment, improved economic conditions and dietary improvement. However, pest attacks, increasing input prices, inadequate technical guidance, limited financial support and inefficient marketing were identified as major challenges.

Methodology / Proposed Approach

The study was conducted during 2024–25 in Rajnandgaon district of Chhattisgarh, selected purposively for the investigation on **"Value Addition of Oyster Mushroom Products for Promoting Farmers' Economic Empowerment."** Four villages—Pendri, Barga, Bharregaon and Kopedih—were selected, and 70 family members were randomly chosen as respondents. Data were collected through a pre-tested Hindi interview schedule using personal interviews. Oyster mushrooms were produced using straw, spawn, lime and other materials, with production reported at 12–18 kg. Several value-added products, including mushroom soup, biscuits, pickle, jam, nuggets, soup powder, mushroom powder, ketchup, dehydrated mushroom and badi, were prepared to promote income generation and economic empowerment among farmers.

Results and Discussion

The study showed that most respondents were marginal and small farmers, with the middle-age group being the largest and high-school education being the most common. Oyster mushroom value addition was found to have good potential because fresh mushrooms have a short shelf life. Products such as soup, biscuits, pickle, jam, nuggets, soup powder, mushroom powder, ketchup, dehydrated mushroom and badi can increase shelf life and provide additional income opportunities. An awareness programme was conducted in the selected villages through farmer interaction and pamphlet distribution. The findings indicate that mushroom cultivation and value addition can support employment and economic empowerment, particularly among small farmers, rural women and other rural entrepreneurs.

Conclusion

The study concluded that oyster mushroom cultivation and value addition have considerable potential for improving farmers' income and economic empowerment in Rajnandgaon district. Processing mushrooms into different value-added products can reduce post-harvest losses, extend shelf life and create additional income opportunities. Strengthening technical training, providing quality spawn, easy access to capital and better marketing facilities can further promote mushroom cultivation and value-added enterprises in the region.

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