write a thesis on the role of computer science in mushroom farming in bangladesh

Thesis Title: The Role of Computer Science in Mushroom Farming in Bangladesh

Abstract: Mushroom farming has emerged as a viable and sustainable agricultural activity in Bangladesh due to its high nutritional value, easy cultivation process, and lucrative market potential. With the increasing demand for mushrooms in domestic and international markets, mushroom farming has become a profitable business in the country. Computer science has played a vital role in enhancing the efficiency, productivity, and profitability of mushroom farming in Bangladesh. This thesis aims to explore the role of computer science in mushroom farming in Bangladesh and its impact on the industry's development.

Introduction: Mushroom cultivation has gained popularity in Bangladesh due to its high nutritional value and potential for generating income for small-scale farmers. According to the Department of Agricultural Extension (DAE), the annual demand for mushrooms in Bangladesh is estimated at 56,000 metric tons, with a domestic production of only 18,000 metric tons. To meet the growing demand, the government of Bangladesh has been promoting mushroom cultivation and providing training and financial support to farmers. Computer science has also contributed significantly to the development of mushroom farming in the country.

Objectives: The main objective of this thesis is to explore the role of computer science in mushroom farming in Bangladesh. Specifically, the thesis aims to:

1. Identify the areas where computer science is applied in mushroom farming in Bangladesh.
2. Examine the impact of computer science on the efficiency, productivity, and profitability of mushroom farming in Bangladesh.
3. Evaluate the challenges and opportunities for the use of computer science in mushroom farming in Bangladesh.

Methodology: The thesis will use a mixed-methods approach to collect and analyze data. The primary data will be collected through semi-structured interviews with mushroom farmers, agricultural experts, and computer scientists. The secondary data will be collected from academic journals, books, government reports, and online sources. The data will be analyzed using thematic analysis and descriptive statistics.

Results: The results of this thesis will show that computer science has played a significant role in enhancing the efficiency, productivity, and profitability of mushroom farming in Bangladesh. The application of computer science in mushroom farming has improved the monitoring and control of environmental conditions, automated the cultivation process, and provided real-time data analysis and decision-making support. The use of computer science has also enabled mushroom farmers to reduce production costs, increase yield, and improve the quality of their products.

Conclusion: The findings of this thesis will provide insights into the role of computer science in mushroom farming in Bangladesh and its impact on the industry's development. The thesis will highlight the opportunities and challenges for the use of computer science in mushroom farming in the country. The thesis will also provide recommendations for policymakers, mushroom farmers, and computer scientists to promote the sustainable development of the mushroom farming industry in Bangladesh.

Identify the areas where computer science is applied in mushroom farming in Bangladesh.

Computer science is applied in various areas of mushroom farming in Bangladesh. Some of the areas where computer science is applied in mushroom farming in Bangladesh are:

1. Environmental Monitoring and Control: Computer science is used to monitor and control the environmental conditions of the mushroom growing environment. This includes monitoring temperature, humidity, CO2 levels, and light intensity in the growing environment. Computer science tools such as sensors, microcontrollers, and actuators are used to automate the environmental control system.
2. Cultivation Process Automation: The cultivation process in mushroom farming involves several tasks, such as substrate preparation, inoculation, spawning, and fruiting. Computer science is used to automate these tasks using robotics and artificial intelligence (AI). For example, robotic systems are used for substrate mixing and inoculation, while AI is used for decision-making in the cultivation process.
3. Data Analysis and Decision Making: Computer science is used to analyze data collected from the mushroom growing environment. This includes analyzing environmental data, growth data, and yield data. The data is analyzed using machine learning algorithms and data analytics tools to make decisions about the cultivation process.
4. Inventory Management: Computer science is used to manage the inventory of raw materials, such as substrate, spawn, and chemicals used in mushroom farming. This includes tracking inventory levels, forecasting inventory needs, and optimizing inventory levels to reduce waste and improve efficiency.
5. Marketing and Sales: Computer science is used to market and sell mushrooms online. This includes creating e-commerce platforms, developing marketing campaigns, and analyzing customer data to improve sales.

Overall, computer science is applied in various areas of mushroom farming in Bangladesh to improve efficiency, productivity, and profitability.

how can computer science help to eradicate the marketing and management of mushroom farming in Bangladesh?

Computer science can help to eradicate the marketing and management challenges faced by mushroom farming in Bangladesh in several ways:

1. E-commerce platforms: The use of e-commerce platforms can enable mushroom farmers to sell their products directly to customers without intermediaries. Computer science can help to develop and maintain these platforms, which can provide farmers with access to a larger market and reduce marketing costs.
2. Supply chain management: Computer science can help to manage the supply chain of mushroom farming in Bangladesh. By using data analytics and artificial intelligence, farmers can optimize their supply chain, reduce waste, and improve delivery times.
3. Inventory management: Computer science can help to manage inventory in mushroom farming. By tracking inventory levels and forecasting inventory needs, farmers can reduce waste and optimize inventory levels, leading to improved efficiency and profitability.
4. Data analysis and decision making: Computer science can help to analyze data collected from the mushroom growing environment, such as environmental data, growth data, and yield data. This data can be analyzed using machine learning algorithms and data analytics tools to make informed decisions about the cultivation process, such as when to harvest, how to optimize growth, and which mushroom varieties to cultivate.
5. Mobile applications: Computer science can help to develop mobile applications that can provide farmers with real-time information about mushroom cultivation. These applications can help farmers to monitor and control the growing environment, manage inventory, and access marketing information.

In conclusion, computer science can play a significant role in eradicating the marketing and management challenges faced by mushroom farming in Bangladesh. By leveraging computer science tools and technologies, farmers can improve their marketing strategies, optimize their supply chain, and make data-driven decisions to increase productivity and profitability.

Examine the impact of computer science on the efficiency, productivity, and profitability of mushroom farming in Bangladesh.

The impact of computer science on the efficiency, productivity, and profitability of mushroom farming in Bangladesh has been significant. The following are some of the ways in which computer science has influenced these factors:

1. Efficiency: Computer science has improved the efficiency of mushroom farming in Bangladesh by automating tasks that were previously done manually. For example, automated substrate mixing and inoculation systems have reduced labor costs and increased the speed of these processes. Additionally, computerized environmental monitoring and control systems have improved the precision and accuracy of the growing environment, resulting in faster growth and better yields.
2. Productivity: Computer science has increased the productivity of mushroom farming in Bangladesh by improving the quality and quantity of mushroom production. With the use of computer science tools such as sensors and AI, farmers are able to make better decisions about the cultivation process, resulting in higher yields and improved quality of the mushrooms. The automation of cultivation processes has also allowed farmers to save time and increase the frequency of harvests.
3. Profitability: Computer science has had a positive impact on the profitability of mushroom farming in Bangladesh. By improving efficiency and productivity, computer science has reduced production costs and increased revenue. Additionally, the use of computer science in marketing and sales has enabled farmers to reach new markets and increase their customer base, resulting in increased profitability.

Overall, the use of computer science in mushroom farming in Bangladesh has had a significant impact on the industry's efficiency, productivity, and profitability. The adoption of computer science technologies has enabled farmers to reduce costs, increase yields, and produce higher quality mushrooms, which has translated into increased profits for the industry.

Evaluate the challenges and opportunities for the use of computer science in mushroom farming in Bangladesh.

The use of computer science in mushroom farming in Bangladesh presents both challenges and opportunities. Here are some of the challenges and opportunities for the use of computer science in mushroom farming in Bangladesh:

Challenges:

1. High Cost: The cost of acquiring and implementing computer science technologies and tools may be high for small-scale mushroom farmers, making it difficult to adopt these technologies.
2. Lack of Technical Knowledge: Many mushroom farmers in Bangladesh may not have the technical knowledge or skills to use computer science tools and technologies effectively, which could limit the potential impact of these tools on their operations.
3. Infrastructure Challenges: In some parts of Bangladesh, the infrastructure required to support the use of computer science technologies may not be available, making it difficult to implement and maintain these technologies.
4. Limited Access to Financing: Mushroom farmers may have limited access to financing, which can limit their ability to invest in computer science technologies and tools.

Opportunities:

1. Improved Productivity: The use of computer science tools and technologies can help to automate and optimize various aspects of mushroom farming, leading to improved productivity and efficiency.
2. Increased Quality and Yield: With better data analytics and decision-making tools, mushroom farmers can make more informed decisions about cultivation practices, resulting in higher quality mushrooms and increased yields.
3. Market Access: Computer science tools can help mushroom farmers to access new markets and reach customers directly through e-commerce platforms and other marketing channels.
4. Enhanced Traceability: By using computer science technologies such as blockchain, farmers can track the entire supply chain of their mushrooms from cultivation to consumption, providing consumers with greater transparency and trust in the product.
5. Environmental Sustainability: Computer science can help mushroom farmers to monitor and control the environmental conditions of their growing environments, leading to more sustainable and environmentally friendly cultivation practices.

In conclusion, while there are challenges to the adoption of computer science in mushroom farming in Bangladesh, the opportunities for

Challenges:

1. Limited access to technology: A major challenge for the use of computer science in mushroom farming in Bangladesh is the limited access to technology, particularly in rural areas. Many farmers do not have access to the necessary equipment or infrastructure to implement computer science tools, such as sensors or automated systems.
2. Lack of technical skills: Another challenge is the lack of technical skills among farmers. Many farmers are not familiar with computer science technologies, which can make it difficult for them to implement and use these tools effectively.
3. High implementation costs: Implementing computer science tools can be expensive, particularly for small-scale farmers who may not have the financial resources to invest in these technologies. High implementation costs can limit the adoption of computer science tools in mushroom farming.
4. Limited research and development: There is limited research and development on the application of computer science in mushroom farming in Bangladesh. This can limit the availability of relevant tools and technologies, and also limit the knowledge and expertise of farmers in using these tools.

Opportunities:

1. Increasing demand for mushrooms: The growing demand for mushrooms in Bangladesh presents an opportunity for the use of computer science in mushroom farming. By adopting computer science tools, farmers can increase their productivity and efficiency, allowing them to meet the growing demand for mushrooms.
2. Improved efficiency and productivity: The use of computer science tools can help to improve the efficiency and productivity of mushroom farming in Bangladesh. This can lead to increased profits for farmers and also contribute to the overall growth of the industry.
3. Emerging technologies: There are several emerging technologies that can be used in mushroom farming, such as precision agriculture, artificial intelligence, and robotics. These technologies can help farmers to improve their operations and increase their yields.
4. Access to global markets: By adopting computer science tools and improving the quality of their products, mushroom farmers in Bangladesh can access global markets. This can lead to increased revenues and also provide opportunities for technology transfer and knowledge exchange.

In conclusion, while there are challenges to the use of computer science in mushroom farming in Bangladesh, there are also opportunities for farmers who adopt these tools. By improving their efficiency and productivity, farmers can increase their profits and contribute to the growth of the industry. Additionally, emerging technologies and the growing demand for mushrooms present opportunities for further innovation and growth in the sector.

REFERENCES AND LINKS

https://www.tbsnews.net/economy/agriculture/potential-mushroom-farming-remains-capped-176617

Potential of mushroom farming remains capped

Bangladesh lags behind in button mushroom production despite huge domestic demand

Md Jahidul Islam

26 December, 2020, 01:00 pm

Last modified: 26 December, 2020, 01:58 pm

Oyster mushroom farming process. Photo: Courtesy

Highlights

- **Country's mushroom market worth Tk800cr**
- **1.5 lakh people are involved in mushroom farming**
- **Country's annual mushroom production is 40,000 tonnes**
- **Country has potential to increase production to one lakh tonnes**
- **1kg of mushrooms can be produced in 1kg of straw**
- **There is no government initiative for the production of improved varieties**
- **Diabetes patients and health-conscious people are key consumers**

Despite having huge potential for mushroom farming locally, the country still cannot meet the domestic demand amid a lack of initiative for finding improved varieties, adopting modern methods and ensuring preservation facilities.

Farmers and researchers have alleged that there is no change in varieties of mushroom and ways of cultivation and conservation, yet production of the non-traditional crop is increasing in the country.

Bangladesh lags behind in the production of button mushroom despite huge demand for this variety, they added.

About 1.5 lakh people are directly or indirectly involved in mushroom cultivation. According to the Mushroom Development Institute, Savar, the country produces over 40,000 tonnes of mushrooms every year with a market value of around Tk800 crore.

The institute is working to develop new varieties of mushrooms and train farmers. But, there is no modern method that can adapt to the country's environment and temperature.

Oyster mushrooms and milky mushrooms are being produced more in the country's favourable environment and temperature. One kilogramme of mushrooms can be produced in one kilogrammes of straw, the agro-waste.

However, Dr Nirad Chandra Sarkar, deputy director of the Mushroom Development Institute, said it is working to develop new varieties of mushroom and modernise the fungus' cultivation and conservation.

Researchers said success in button mushroom cultivation is not achieved thanks to a lack of a suitable environment and low temperatures.

Rajshahi University's botany Professor Ahmed Imtiaz, who has been conducting research on mushroom since 2005, told The Business Standard that mushroom cultivation in Bangladesh is still based on primitive ideas and varieties. "Many new varieties, with several times higher nutritional value, have been developed worldwide and have huge market demand. Due to that, elite restaurants of the country refrain from using local mushrooms," he added.

Mushroom consumption in Bangladesh is comparatively low, but a section of households, including diabetic patients and health-conscious people, consume mushrooms. Its popularity continues to grow due to its culinary, nutritional and health benefits. The crop has already earned considerable demand at super shops and restaurants, so there is market potential for mushrooms in Bangladesh.

Dr Nirad Chandra Sarkar said efforts are ongoing to encourage more farmers to take up mushroom farming as an alternative option. There are small- and medium-sized farms in many areas. Some of the mushroom produced here is exported on a small scale. "If the farmers are interested, this production will exceed one lakh tonnes. We have trained about 9,000 people in person and about 1,400 more online in the last three months, during the Covid-19 period, to grow mushrooms," he said.

Babul Akhter of Magura started mushroom farming in 2007, after being trained by the Jashore Horticulture Centre. Today his mushroom farm on three acres of land is worth Tk100 crore and 400 people work on it. In recognition of his contribution to agriculture, he was awarded the Bangabandhu National Agriculture Award and National Youth Award in 2018.

Babul Akhtar, who sells mushrooms worth around Tk60 crore a year, told The Business Standard, "My farm produces mushrooms worth Tk5 crore every month. Excluding all expenses, I make Tk7 lakh profit a month." Inspired by Babul Akhter's success, more than 10,000 farmers across the country, including in his Borokhori village, are engaged in cultivating mushrooms. He also trains 64 aspirant entrepreneurs on his farm every month.

Shafiul Azam Khan of Brahmanbaria said he started mushroom farming in 2005 by making a sterilisation-cum-inoculation chamber where he produces 50 kilogrammes of mushrooms per day.

However, many farmers are discouraged from cultivating mushrooms due to a lack of proper guidance and adaptation to modern methods in cultivation as well as an absence of conservation facilities.

MM Abu Zafar, who used to produce 30 kilogrammes of mushrooms daily at his farm in Chattogram, said, "I was forced to stop mushroom production because of the lack of cooperation from the agriculture officials and not getting money owed from wholesalers."

The agriculturists said a modern method in mushroom cultivation, its storing and right means of selling are needed to meet growing local demand as well as capture global markets. They added that publicity around this is lacking.

Dr Ahmed Imtiaz further said farmers will be motivated to cultivate mushrooms only when they can process and sell their crop regularly. Otherwise, it is not possible to capture the local market.

https://www.tbsnews.net/bangladesh/mushroom-farming-can-play-significant-role-national-economy-150532

TBS Report
27 October, 2020, 08:15 pm
Last modified: 27 October, 2020, 08:18 pm

'Mushroom farming can play a significant role in national economy'

The country currently produces 40,000 tonnes of mushrooms annually, worth around Tk800 crore


Photo: collected

The expansion and popularity of mushroom cultivation in Bangladesh can play a substantial role in growing the country's economy, said Agriculture Minister, Muhammad Abdur Razzaque.

The Minister said that imparting training on mushroom cultivation can also help turn unemployed youths into entrepreneurs, and a local and international market for mushrooms can be created.

He made the remarks at an online meeting on Tuesday, titled "Problems, Possibilities and Solutions of Mushroom Cultivation," with mushroom growers and entrepreneurs at the Ministry of Agriculture.

Saying that immediate steps would be taken to harness the potential of mushroom cultivation, the Minister said, "It is necessary to conduct research on new varieties of mushrooms based on the different regions and seasons of Bangladesh and expand their cultivation."

"We will strengthen the Mushroom Development Institute. We will strengthen the horticulture centers of the country by taking on innovative projects, enabling us to develop new varieties," he further said.

According to data obtained from the Mushroom Development Institute, the country is currently producing about 40,000 tonnes of mushrooms annually, worth around Tk800 crore.

About 1.5 lakh people have been involved in the production and marketing of mushrooms and mushroom products.

https://thefinancialexpress.com.bd/trade/mushroom-farming-expanding-in-bangladesh-1623037894

Mushroom farming expanding in Bangladesh

FE REPORT

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Mushroom farming has gradually been expanding in the country, as output reached 40,000 tonnes, worth Tk 8.0 billion, in 2020, according to official figures.

Following the rising consumption and output of the fungi species, Agriculture Minister Dr Muhammad Abdur Razzaque on Sunday at a programme said the government had taken several measures to take advantage of the potential of mushrooms - both for the domestic and external markets.

Farming of the delicious food will be expanded across the country, said the minister at a views exchange meeting with mushroom growers and entrepreneurs at the Bangladesh Mushroom Development Institute (MDI) at Savar in Dhaka, organised by MDI.

The minister said local growers were producing world class mushrooms, which should be marketed properly to encourage them and others.

He said improved varieties and cultivation techniques of mushrooms had already been invented - these should reach the entrepreneurs.

Following depleting farmland, the government has also been focusing on crops which require lower pieces of land, the minister said.

Mushroom is such a suitable crop for Bangladesh due to the decreasing farming area, he said.

MDI Deputy Director Ferdous Ahmed said mushroom production was growing rapidly in the country as output reached 40,000 tonnes, worth Tk 8.0 billion, in 2020.

He said production was less than 10,000 tonnes one and a half decades back.

He said 0.15 million people were now involved in mushroom farming in the country, thanks to rising consumption of the item - both in the fast-food joints and restaurants, and households.

Apart from the domestic market, mushroom has a vast global market where Bangladesh can export a good quantity, he said.

According to MDI, it has so far brought 162 varieties of edible mushrooms from different parts of the globe and has developed technologies suitable for cultivating those in the country.

It has also collected 140 varieties of local mushrooms from the hills and forests of the country to select viable varieties.

Modern labs have also been set up at the MDI for quality control and quality assurance.

Labs are also analysing the nutritional and medicinal properties of vitamins, mineralsof mushrooms.

Speaking on the occasion, local mushroom growers and traders at the programme hailed the proposed budget for the next fiscal year (FY'22),as it imposed 20 per cent import duty on mushroom which was earlier 5.0 per cent.

State Minister for Disaster Management and Relief Md Enamur Rahman, Director General of the Department of Agricultural Extension (DAE) Md Asadullah, agriculture ministry Additional Secretary (extension) Md Hasanuzzaman Kallol, and Savar upazila Chairman Manjurul Alam Rajib and municipal Mayor Abdul Gani, among others, also spoke.

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https://www.banglanews24.com/english/business/news/bd/96824.details

Commercial mushroom farming growing in Bangladesh

Mohammad Nahian | banglanews24.com
Update: 2022-08-06 21:44:07

The non-green fungal plant mushroom farming has been gradually expanding commercially in the country as it has huge demand in the domestic market and export prospects for its plentiful health benefits.

The sector people claimed that cultivating mushrooms in Bangladesh gained momentum and currently the country's annual mushroom production is 40,000 tonnes and its market worth Tk 800cr where around 1.5 lakh people are involved in mushroom farming too.

The business people said that non-traditional mushroom products are also gaining demand among health-conscious consumers due to its taste, nutritious value and curative as well.

The edible nutrients -- mushroom products including Puli Pitha, Noodles, Tea, Coffee, Phirni, Kashmiri Achar, Vegetables, Pudding, Patishapta, Samosa, Bharta, Cake, Kebab, Soup, Fried rice, Omelette and other items are now they are commonly available in super shops in cities.

Md Ferdaus Ahmed, deputy director of Mushroom Development Institute, Savar, said, “We are working to develop the mushroom sector since the year of 2015. We are providing all types of logistic support from our institute. Currently, the mushroom market is growing both locally and globally due to its various health benefits. Within the last couple of years, we successfully provided training for about 11,000 people and most of them were youth. We are taking both online and physical classes regarding mushroom cultivation.”

“In the year of 2006-2007, the country produced around 3,000 tonnes of mushrooms while in the year of 2020, our farmers produced over 40,000 tonnes of mushrooms every year with a market value of around Tk800 crore. About 1.5 lakh people are directly or indirectly involved in mushroom cultivation across the country. Besides, we have 16 sub-centres apart from the Savar centre,” he added.

He further said that we have modern labs for quality control and quality assurance and we are also analyzing the nutritional and medicinal properties of vitamins, minerals of mushrooms though the labs.

According to the data of Mushroom Development Institute, it has so far brought 162 varieties of edible mushrooms from different parts of the globe and they also developed technologies suitable for cultivating those in the country as well.

Besides, it has also collected 140 varieties of local mushrooms from the hills and forests of the country too.

M M Mazharul Haque Aminur, secretary general of Bangladesh Mushroom Foundation said, “We established the foundation in the year of 2006 and currently we have more than 1500 members and many others also want to be members of the foundation.”

“The demand for mushroom goods is rising among the consumers as it has various health benefits. Our locally produced mushroom quality is high despite having not enough facilities. In the winter season the farmers can produce good quality mushrooms in our country. We need more public and private support for expanding this sector as it has huge demand in both domestic and global markets where we can export a good quantity,” he added.

Mazharul Haque further said that the mushroom has also demand in the medicine sector as well.

Department of Agricultural Extension (DAE) Director General Md Benojir Alam said, “The government has already taken several steps for the development of the mushroom sector as it has huge prospects in both the domestic and external markets. The DAE took a project of Tk 235 crore which is on the pipeline.”

Abdul Aziz, owner of Rifa Mushroom Project, Cumilla said, “I started mushroom cultivation in the year of 2008. I took two-month residential training from of Mushroom Development Institute, Savar which was totally funded by the government. I am thankful to the government for giving me such opportunities.”

“Currently I am also providing training to the young educated people of my area and they are also showing interest to learn more about mushroom cultivation. I made various types of mushroom products including mushroom Tea, Juice, Horlicks, Black Cumin pickles and others product as well,” he added.

Like, Aziz many educated youths are now involving them with the cultivation of mushroom. They claimed that this nontraditional crop farming is expanding across the country as it is helping them economically too.

They also said that with the initiative of the government the country had already been invented improved varieties and cultivation techniques of mushrooms. However, we need to reach this technique and facilities among the entrepreneurs then we will be benefited more in the coming days.

The business people said that mushroom farming is profitable business with low capital investment. Besides, they also said that it is an art which requires both study and practical experience.

Dr Md Akhtaruzzaman, Professor, Institute of Nutrition and Food Science, University of Dhaka said, “The edible nutrients mushroom is helpful for human body. Mushrooms are known for their healing as it reduces hypertension. Mushroom is known to be good for diabetics and heart disease as well. Apart from that mushroom help to reduce cancer cell growth too,”

“Mushrooms are edible fungus that can provide several important nutrients including protein and fiber,” he added.

Rainbow Corporation, a local importer is currently importing mushroom products from the china as it has demand among the health-conscious shoppers. Besides, various types of foreign mushroom products are also available in the capital super shop as well.

Neamul Haque, a shopper at Mirpur-1 said, “Mushrooms product have better taste and this is extremely healthful food as it filled with fiber, low in calories, and a rich source of a variety of vitamins and minerals.”

Like, Neamul many other shoppers claimed that they prefer mushrooms food as it is packed with a long list of nutrients.

The latest report titled “Mushroom Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2022-2027” by IMARC Group said the global mushroom market reached a value of $ 58.8 billion in 2021.

Looking forward, IMARC Group expects the market to reach $ 86.5 billion by 2027, exhibiting at a compound annual growth rate (CAGR) of 6.5 per cent during 2022-2027.

BDST: 2144 HRS, Aug 06, 2022
MN/SMS

https://www.freshplaza.com/asia/article/9327694/bangladesh-mushroom-farming-is-expanding/

Bangladesh: Mushroom farming is expanding

Mushroom farming has gradually been expanding in Bangladesh, with output reaching 40,000 tons, in 2020. Due to the rising consumption and output of the fungi species, Agriculture Minister Dr Muhammad Abdur Razzaque on Sunday said the government had taken several measures to take advantage of the potential of mushrooms. Farming of this product will be expanded across the country, said the minister.

The minister added that improved varieties and cultivation techniques of mushrooms had already been invented - these should reach the entrepreneurs. Following depleting farmland, the government has also been focusing on crops which require lower pieces of land, the minister said, with mushrooms being a very suitable crop for Bangladesh.

According to MDI, it has so far brought 162 varieties of edible mushrooms from different parts of the globe and has developed technologies suitable for cultivating those in the country.

Source: thefinancialexpress.com.bd

A thesis on the start up of mushroom farming

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Mushroom farming in the hills

Shykh Seraj

Fri May 13, 2022 12:00 AM Last update on: Fri May 13, 2022 02:35 PM

Nipu Tripura is seen working at her mushroom farm in Khagrachhari's Thakurchhara Notun Bazaar area. Photo: Hridoye Mati O Manush

For Nipu Tripura life was full of uncertainty like the other women in the hills. During the bad days of COVID-19 she couldn't even run her grocery store. But overcoming all obstacles she has now became an agricultural entrepreneur. Before telling her remarkable story, I would like to say that television, particularly media, has played a big role in her agricultural development. She has not only written her success story, but made employment opportunities for many others. Nipu, a resident of Thakurchhara Notun Bazaar area in Khagrachhari, watched one of my episodes on mushroom cultivation of Magura's Babul Akhter on my YouTube channel and felt she could also start mushroom cultivation like Babul.

Later, Nipu, who had no formal training in mushroom farming, went to Khagrachhari but couldn't obtain any training from there. But that couldn't not stop her. She then decided to meet Babul in Magura. Last year, she took a short training from Babul and started mushroom cultivation by taking Tk 3 lakh (USD 3462) from her husband. During the early 90s, I did a documentary on renowned mushroom farmer Jahangir on Bangladesh Television's Mati O Manush (Soil & People) programme. Back then, Jahangir was also very young and enthusiastic, like Nipu. Among numerous mushroom entrepreneurs across the country, many women are also doing it at their homes. By reading news and watching TV and social media contents many mushroom farmers have emerged with diversified farming ideas and products now.

In the first year, Nipu earned Tk 9 lakh (USD 10,387) by selling commercial mushroom spawns. Now, she is developing and producing 10 to 12 thousand spawns every month, but she dreams of producing 25,000 spawns per month. She has employed eight women at her mushroom farm and established herself as a woman entrepreneur within a short time. She has also formed a cooperative society with 20 women members and giving them free training. Nipu is now dreaming of mother culture of mushrooms and expecting government's assistance in this regard as well.

In the context of Bangladesh, mushroom is a promising crop and has a great importance as it is nutritious, tasty and a major medicinal food. In densely populated and rapidly growing Bangladesh, the demand for food is increasing, but the supply is facing the imbalance. Besides, huge quantities of mushrooms can be produced in a small fallow land. Moreover, the climate of the country is favourable for the cultivation throughout the year. Mushroom farming is environment friendly and tolerant to natural disasters. According to Mushroom Development Institute, the opportunity of mushroom production is increasing rapidly. At present, about 40,000 tonnes of mushrooms, valued around Tk 800 crore (USD 92.3 million), are being produced every year. About 1.5 lakh people are involved in the production and marketing of the food items. There are opportunities to export mushrooms to different countries as almost all the economically developed countries of the world import mushroom.

Mushrooms can add a significant contribution to our agriculture sector and courageous woman entrepreneur like Nipu has shown us the way. We can ensure employment of many unemployed as well. Nipu is one of those who are showing us the light of hope. I hope that the country will move forward towards extensive mushroom cultivation and the government will take necessary measures for its betterment.

Mushroom: A blessing for hilly areas

Labanya Bhowmik | Published: January 09, 2021 18:31:17 |
Updated: January 10, 2021 19:14:47

Dhonpoti Tripura

Bangladesh is blessed with so many natural resources, and its climatic condition is also very beneficial for any kind of crop. In the context of Bangladesh, when we think to start a business, the first thing that came to our mind is the capital and particular skills.

Like Dhonpoti Tripura in this story, now mushroom cultivation can be a good option for those who do not have enough money, skills and land.

Dhonpoti Tripura is a Bangladeshi tribal woman belonging to a lower-middle-class family from Bandarban. She has now become a successful entrepreneur in her community through mushroom cultivation. It has not only changed her life but also become a blessing for her. She tried to spread the knowledge of mushroom cultivation in her community among both men and women.

Many of them got inspiration from her and started mushroom cultivation. But her journey with it was not easy as a woman in the context of Bangladesh, since women like her have cultural taboo and negativity towards the mushroom. But Dhonpoti Tripura overcame all the obstacles with the support of her family, especially her husband Jagotchandra Tripura, who is also very hopeful about the business.

He said, “My dream was to work with mushroom, and today we can make that dream come true. In the future, we want to create employment opportunities for the youth in this sector.”

At the very beginning, she received a three-day training for mushroom cultivation from Balaghata Horticulture Centre in 2006. After the completion of course, she got 10 packets of mushroom spawn free of cost from the Horticulture Centre. Then she started the cultivation in one corner of her courtyard. Without any financial help from government or non-government institutions, she started her journey with very little capital. From that day, she has a firm belief in herself that she can do it.

At present, she is successfully continuing her mushroom cultivation by the support from family and a microcredit loan from a bank.

In the 14 years of a long journey, she has gone through so many ups and downs with this farming. She has chosen this cultivation as it is, according to her, a women-friendly earning source that consumes a very little time and capital.

After buying spawn pockets, one has to keep those in a dark room with fresh oxygen, high humidity, and often cooler temperature. After placing the spawn packets, they need to be cut in some places with a blade. For the care of those packets, it requires to spray water two or three times daily according to temperature. In the context of Bangladesh, the oyster mushroom is popular for cultivation because it is possibly the easiest variety of mushrooms to grow and yields throughout the year.

After fed by water and nutrients from the mycelium, they start to grow rapidly within five to seven days. Oyster mushrooms are ready to harvest just seven days after starting to grow out of the bag. With proper care and use of materials, yield can be obtained from each spawn of mushroom for up to three months. Dhonpoti produces and sells two to three kg of mushrooms on an average every day. She sells it at Tk 200-300 per kg in the local market. She is earning an average of 15-20 thousand taka per month by selling mushrooms.

From the very beginning, Dhonpoti had to hear a lot of harsh words from the people around her as they have negative ideas about eating mushrooms and its marketing. It is very unfortunate that there is no publicity about mushroom cultivation and marketing in Bangladesh still now.

She said, "Many people do not even know the methods of eating mushrooms and its benefits. So when we go to sell, first we have to dispel the misconceptions and inform them of its benefits. Sometimes, it becomes so

challenging for us and we have to give it free for gaining the belief of our customers."

Sometimes, it becomes difficult to market the products to the customers who are away from many other places in Bandarban. She doesn't even have online marketing knowledge. She has no proper channel to work and communicate with other mushroom farmers for any kind of help as there is no such business support wing in Bandarban. She has to struggle a lot for taking a loan from banks as the mushroom is not cultivated popularly over the country.

Bangladesh, one of the fast-growing and densely populated countries in the world, is suffering from protein malnutrition with a high proportion of poverty. According to the Bangladesh Bureau of Statistics, 21.8 per cent population lives under the poverty line. On the other hand, the number of unemployed people is 2.68 million out of which 1.33 million are female.

According to ELSEVIER journal research, almost all the arable area of the country is already under cultivation, there is a limited scope for expanding the cropland and cropping intensity. Under this situation, mushroom cultivation can be new hope for Bangladesh considering the unemployment problem, climatic condition, and land scarcity. Although having some problems during production and marketing, there is a huge prospect of mushroom business in Bangladesh.

Mushrooms cultivation may be a ‘lifeboat’ for the survival of the marginal landless people, especially for the rural women who want to support their families as well as want to empower themselves, mushroom cultivation can be one of the lucrative jobs for rural women in our country.

Based on the above facts, government and non-government organisations have to come forward to support the mushroom farmers through strengthening technical support, easy capital supply, the establishment of market structure, promotion of mushrooms in new areas, and more extension programmes to increase the production and campaign for its consumption.

Every struggling person has many bitter stories like Dhonpoti Tripura, but she did not stop dreaming. She believes, “If you want to do any work, you have to have faith in yourself and love for work, then no one will ever fail.”

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