

Best Practice No.1

1. Title of the Practice: Women Empowerment through Demonstration of Mushroom Cultivation Technology

2. Objectives:

- 1) To create awareness among Girls student about Entrepreneurship and employability skills.
- 2) To Strengthen the linkage and bonding between self-Employability skills and women empowerment.
- 3) To create self-employability skills through Mushroom cultivation technology Which help in future life.

3. The Context

The college established in the village Igatpuri which known for its beautiful natural spots. The women in the villages lack the education and need empowerment skill. The have great potential but less opportunities. The girl's students in the college get early married and left the education. Such women and girls need to self-employed themselves and to increase their participation in the financial matters. The college also take initiative to create women empowerment awareness among girl's students and rural women. The college signed MOU with Mann Deshi Foundation for self-employability skills and entrepreneur through the mushroom cultivation training. Mushroom cultivation has great scope in India. The rural women empowerment increased through such activity.

4. The Practice

Mushrooms were rich in crude fiber, proteins and vitamins but low in fat and calories. The major activities such as Mushroom cultivation training, providing knowledge about types of mushroom and cultivation technology.



college also organizes NSS Camp in which rural women in the selected spot got chance to participate in this training program. The women who interested in this training session were registered their name and trainer gave information about mushroom cultivation in detail. The demonstration given by the trainer. After this training the participant got the certificate. The college signed MOU with Mann Deshi Foundation for self-employability skills and entrepreneur through the mushroom cultivation training. The rural women empowerment increased through such activity.

5. Evident of Success:

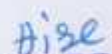
The college organized such training workshop for rural women in Igatpuri. The alumni students also participate in this training workshop. As above mentioned that The college signed MOU with Mann Deshi Foundation for self-employability skills and entrepreneur through the mushroom cultivation training. The trainer Mrs. Sunanda Busare visited Igatpuri village for such training and demonstration. She explained the process of mushroom cultivation. In India mushroom market has been divided into button mushroom, shiitake mushroom, oyster mushroom, and others. The packing demonstration shown in the training workshop.

6. Problem Encountered and Resource

Lack of cultivation house, unavailability of good spawn and promotion in local area. Temperature is one of the most critical factors in mushroom cultivation, as it affects the growth, development, and yield of mushrooms.


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Mushroom Cultivating Training


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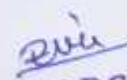
7.2.1.

Nashik shikshan prasarak Mandals' Arts and Commerce college, Igatpuri has arranged "Mushroom Taining Programme" every year for the women of Igatpuri village.




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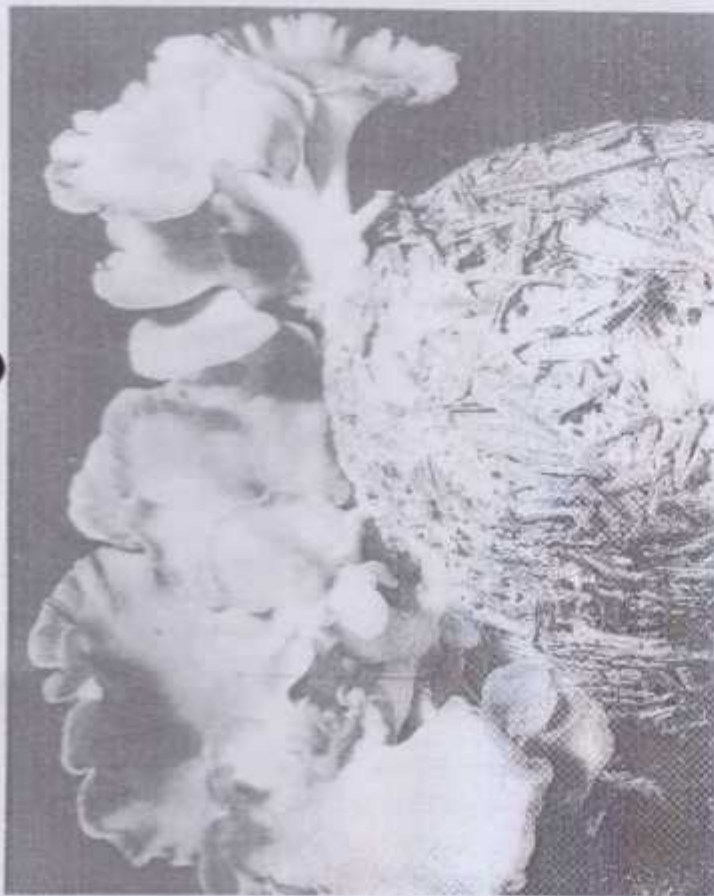


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CULTIVATION TECHNOLOGY FOR OYSTER MUSHROOM



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CULTIVATION TECHNOLOGY FOR OYSTER MUSHROOM

INTRODUCTION

The mushroom is a simple form of life known as fungus. It lacks chlorophyll, so it cannot produce its own food and depends upon other living or dead plants and organic matters. Commonly, mushrooms are in the form of an umbrella-like structure or a cap with stalk. However, there is a lot of variation in fruiting structure with different shapes, size and with or without stalk. Some varieties even produce fruiting bodies underground. There are large number of species growing wild in nature, while many are edible, some are mild to deadly poisonous.

Mushrooms are popular for their delicacy and flavoured food value. It is well established fact that they are excellent sources of vitamins and minerals. They also contain appreciable amounts of vitamins like Niacin and Pantothenic acid, minerals such as calcium, phosphorus and potassium and a fair quantity of iron. Folic acid which is of vital importance for treating anaemic condition in the human body is available in large quantity. Their protein may be considered intermediate to that of animal and vegetables. Fresh mushrooms contain about 80-95% moisture, 3% protein, 0.3-0.4% fat and 1% minerals and vitamins. With the low carbohydrate and fat contents they constitute an ideal dish for diabetic patients.

TYPES OF MUSHROOMS SUITABLE FOR ARTIFICIAL CULTIVATION

Although a great many species of mushrooms are edible, very few have been artificially cultivated. The most popular among these are European or White button mushroom (*Agaricus bisporus*), Paddy straw mushroom (*Volvariella spp.*), Oyster mushroom (*Pleurotus spp.*) and Shiitake (*Lentinus edodes*). European mushroom is more specific in its temperature requirement which ranges between 14-20°C (Optimum 16-20°C) during cropping. Paddy straw mushroom can be successfully grown at places where temperature range is 28-38°C. Oyster mushroom can be grown in temperature range of 20-33°C. Due to its easy way of cultivation in a wide range of temperature and high yielding performance, it is becoming more popular in many parts of the country. Under the Goa weather conditions, Oyster mushroom can be grown successfully throughout the year.

OYSTER MUSHROOM CULTIVATION

There are several *Pleurotus* spp., viz., *P. ostreatus*, *P. flabellatus*, *P. sajor caju*, *P. florida* etc., well known for their delicacy and flavour. These species grow wild in the forests which can be cultivated in thatched, polythene, brick or stone houses.

Substrate preparation

Oyster mushroom can be grown on various substrates viz., paddy straw, maize stalks/cobs, vegetable plant residues etc. Since paddy straw is easily available and cheap, it is widely used. Paddy straw should be fresh and well dried.

Soaking

Chop paddy straw into 3-5 cm pieces and soak in fresh water for 8-16 hours. If maize stalks/cobs are used, soaking period should be 24-48 hours. Drain off excess water from straw by spreading on raised wire mesh frame.

Heat Treatment

Heat treatment of substrate results in minimizing contamination problem and gives higher and almost constant yields. It can be done in two ways i.e. by pasteurization and sterilization by chemicals.

(i) Pasteurization

Boil water in a wide mouth container such as tub or drum. Fill the wet substrate in gunny bag or basket and close the opening. Dip the filled bag in hot water of 80-85°C for about 10-15 minutes. To avoid floating, press it with some heavy material or with the help of a wooden piece. After pasteurization, excess hot water should be drained off from container so that it can be reused for other sets. Care should be taken to maintain hot water temperature at 80-85°C for all sets to achieve pasteurization.

(ii) Chemical sterilisation technique

Take 90 litres of water in a drum of 200 litre capacity. Slowly steep 10 kg of chopped paddy straw in the water. Mix 125ml of formaldehyde (37-40 percent) and 7 g of Bavistin dissolved in 10 litres of water in another container and pour the solution slowly into the drum. Straw should be pressed and drum should be covered with a polythene sheet. Take out the straw after 12 hrs.

Spread the pasteurized or chemically sterilised straw on neat and clean cement flooring or on raised wire mesh frame, inside the chamber where bag filling and spawning are to be done.

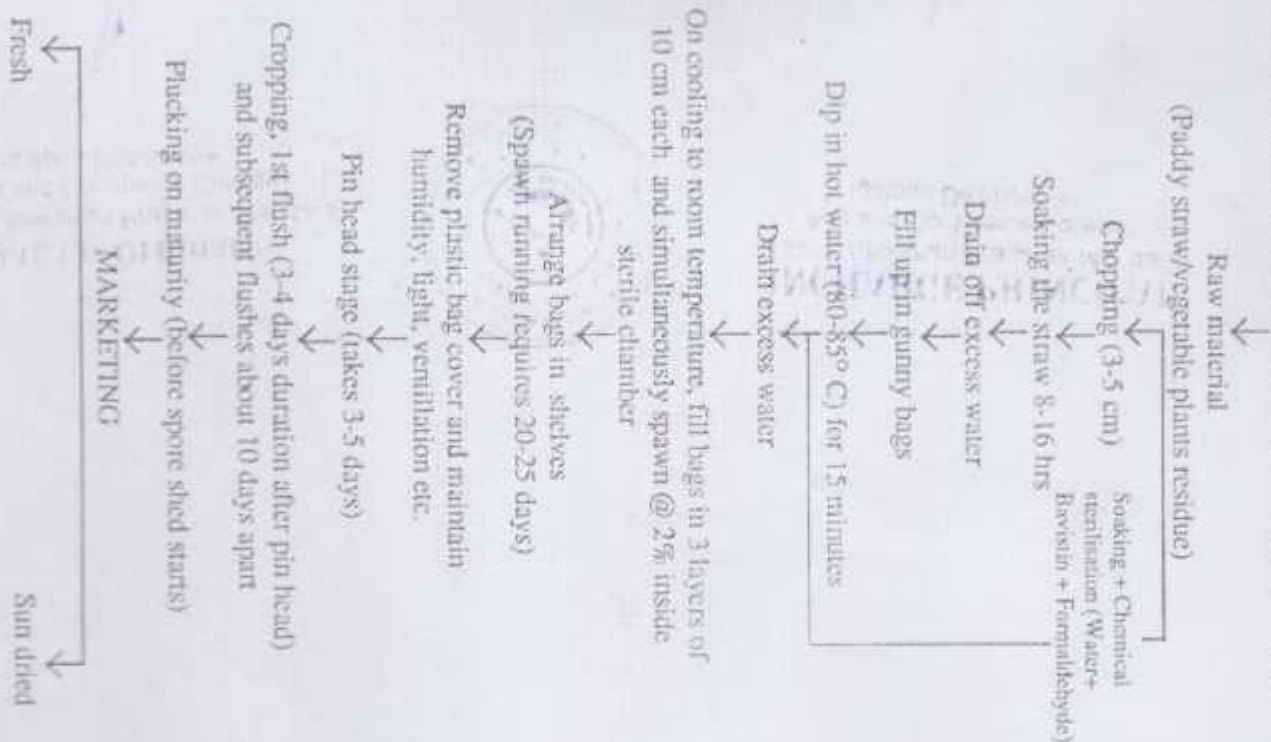
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STER MUSHROOM CULTIVATION - FLOW CHART



Schedule of hygiene

1. Keep the surrounding areas neat and clean. Put fine wire mesh on the ventilators to check flies.
2. In the rooms where bags are filled and kept for spawn run, Nuvaq/Nuvacon, (1 ml/litre of water) and formaldehyde solution (50 ml/litre of water i.e. 5%) should be sprayed 48 hours earlier.
3. Repeat Nuvaq/Nuvacon spray at weekly interval and formaldehyde 2% twice a week during spawn run.
4. Cropping rooms should be sprayed with Nuvaq/Nuvacon and formaldehyde (5%) 24 hours before bags are shifted inside.
5. Between two flushes, use Dichlorvos twice a week after harvesting. Avoid direct spray on beds.
6. If any weed moulds noticed, treat the spot with cotton soaked in formaldehyde solution (4%).
7. Once crop is over, spray Nuvaq/Nuvacon and formaldehyde (5%) and remove spent substrate after 24 hours of the treatment, which can be used as manure for crops.

Ventilation

During spawn run, ventilation is not important. However during cropping, fresh air is required. Hence, cropping rooms should be provided with proper ventilation.

Note: For further details and supply of spawn bottles, contact or write to the 'Officer on Special Duty', ICAR Research Complex for Goa, Ela, Old Goa - 403 402. Spawn bottle costs Rs. 4.00 each and on replacement of empty bottle, it costs Rs. 3.50 only. Short term training courses will be conducted by Krishi Vigyan Kendra of ICAR Research Complex, Ela, Old Goa.

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Published by
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Spawning

When the pasteurized substrate has cooled down to room temperature, it is ready for filling and spawning. At this stage, substrate moisture content should be about 70%. Polythene bags (35 x 50 cm, 150 gauge) or polypropylene bags (35 x 50 cm, 80 gauge) may be used for its cultivation. One 500 ml bottle spawn (200-250 g) can be used for 10-12 kg wet straw (3 bags). Spawning can be done in layer spawning or through spawning.

In case of layer spawning, fill the substrate in bag, press it to a depth of 8-10 cm and broadcast a handful of spawn above it. Similarly, 2nd and 3rd layers of substrate should be put and simultaneously after spawning, the bags should be closed. In through spawning, pasteurized straw is mixed with 2% spawn and filled in bags. After gently pressing, close the bags for spawn running (development).

Spawned bags should be stacked in racks in neat and clean place, in closed position. Temperature at $25 \pm 5^\circ \text{C}$ and humidity at 70-85% should be maintained by spraying water twice a day on walls and floor. It takes 20-22 days when bags will be fully covered with white mycelium.

Cropping and harvest

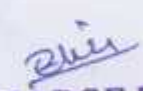
After 20-22 days, when bags are fully impregnated with white mycelium, transfer the bags into cropping room and remove polythene/polypropylene covers. The open blocks should be kept in racks about 20 cm apart. Rack should be 60 cm wide with gap of 50-60 cm between two shelves. Mushrooms grow in a temperature range of $20^\circ\text{--}33^\circ \text{C}$.

Relative humidity is maintained by spraying water twice a day on the walls and floor of the room. Spraying of blocks should be avoided for the first 2-3 days. A light mist spray of water is given on blocks as soon as the small pin heads appear. Once pinheads are 2-3 cm big a little heavier watering is to be done on blocks and further watering of blocks is to be stopped to allow them to grow. Mushrooms should be plucked before they shed spores to maintain quality. After 1st flush of harvest, 0.5 to 1 cm outer layer of the block should be scrapped. This helps to initiate 2nd flush which appears after about 10 days.

After harvest, the lower portion of the stalk must be cleaned with dry cloth. They should be packed in perforated (5-6 small holes) polythene bags to keep them fresh. It loses freshness after about 6 hours, which can be enhanced by keeping them in refrigerator. Oyster mushroom can be sundried for 2 days and dried product marketed in polythene bags. Dried mushrooms should be soaked in water for 10 minutes before use.


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2023

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MEMORANDUM OF UNDERSTANDING

BETWEEN

MANN DESHI FOUNDATION

&

NASHIK SHIKSHAN PRASARAK MANDAL'S NASHIK

ARTS AND COMMERCE COLLEGE, IGATPURI

FOR

DEVELOPING EMPLOYABILITY AND ENTREPRENEURSHIP SKILLS FOR WOMEN

EMPOWERMENT

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MANN DESHI FOUNDATION

&

**NASHIK SHIKSHAN PRASARAK MANDAL'S NASHIK
ARTS AND COMMERCE COLLEGE, IGATPURI**

FOR

**DEVELOPING EMPLOYABILITY AND ENTREPRENEURSHIP SKILLS FOR
WOMEN EMPOWERMENT**

Memorandum of Understanding Between

INSTITUTIONS FOR COOPERATION, PROMOTION & NETWORKING OF INSTITUTIONAL QUALITY ASSURANCE CELL FOR STANDARDIZATION OF POLICIES & PROCEDURES

1.0 PARTICIPATING INSTITUTIONS

- 1.1 The Parties intend by this MOU to establish a mutually beneficial partnership.
- 1.2 This MOU will address the basic relationship, roles and responsibilities of the Parties but leaves for later agreement the more precise terms that will constitute the substance of the partnership.
- 1.3 The MOU also provide scope of adding further colleges in future.

2.0 PURPOSE

The Parties enter into this MOU for the primary purpose of Co-operation Promotion and Networking of IQAC's of respective colleges to standardize policies, procedures and to collectively work out areas for better academics and administration and to bring a qualitative change in organizations with IQAC playing a Pivotal role. The purpose of this program is to create awareness among women about commercial work and to instil entrepreneurship. The graduate girls' students of our college will be expected to visit to the partner MANN DESHI FOUNDATION, NASHIK ROAD during the academic year. The girls' students able to understand the scope of Mushroom making in the local area. They will meet with members in the foundation in order to discuss future challenges and potential projects. The keen interest of women will be increased in mushroom cultivation technology

3.0 AUTHORITY

The MoU will primarily be governed by the respective principal of the colleges in their campuses. The IQAC Coordinators/ nominees will be the authority to represent and express the college. The collective decisions made will be implemented by the IQAC Coordinator.

4.0 ROLES AND RESPONSIBILITIES OF THE PARTIES. The Parties intend to undertake the following activities pursuant to this MOU:

4.1 Parties agree to:

- 4.1.1 Work jointly on the issues related cultivation technology for oyster mushroom.
- 4.1.2 Have necessary agreements/MoU's needed for conducting activities in colleges;
- 4.1.3 Share information with confidentiality as the main clause which does not harm the participating organizations;
- 4.1.4 Create better working environments and Commercial practices through joint working;
- 4.1.5 Create easy and better documentation procedures; to promote non violence
- 4.1.6 We will provide young fresh Graduates Apprentice students for Factory.

4.1.7 To promote mutual understanding in each other's institutions and to provide genuine inputs;

4.1.8 To create variety of types of feedback mechanisms to promote colleges to go for better governances.

4.1.9 To prepare an IQAC Calendar of events for better governance and to adhere to schedules.

4.1.10 Any other activity of common interest that promotes quality in the working of the organization.

4.2 The parties agree to:

4.2.1 Work in the collaboration for a tenure of 5 years from the date of signing

- to arrange for periodic quiz or specific academic or projects
- to stimulate the academic environment for promotion of quality of teaching learning and research in higher education institutions regarding employability.
- to encourage self-enhancement reading the commercial world, research need accountability and innovation in developing employability and entrepreneurship skills for women empowerment.
- sharing infrastructure to promote the keen interest about cultivation technology for oyster mushroom.

4.2.2 During Visit

- Each faculty is expected to participate in the programme for the academic year.
- The concerned faculty will be treated on DUTY LEAVE and shall be given the Letter of Invitation along with the necessary schedule and details as well as Thanking Letter from the concerned college.
- Visiting students will participate various Activities do research projects.
- The factory representative can select students for training for the mushroom cultivation.
- Visiting students will meet with various departments to learn about the practice of business etiquettes.

This MoU would promote the functions expected.

4.2.3 To promote core values of NAAC

- Contributing to National Development
- Fostering practical knowledge among Students
- Inculcating a Value System among Students
- Promoting the need of cultivation technology for oyster mushroom research.
- Quest for employability skills through mushroom training.

5.0 AGREEMENTS. In order to foster the successful completion of this MoU, the Parties agree to the following terms and conditions:

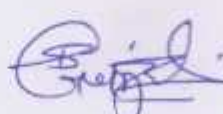
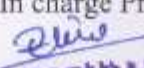
1. Each Party pledges in good faith to go forward with this MoU and to further the goal and purposes of this MoU, subject to the terms and conditions of this MoU. The Parties shall attempt to resolve disputes through good faith discussions.
2. Either Party may withdraw at any time this MoU by transmitting a signed writing to that effect to the other Party. This MoU and the partnership created thereby shall be considered terminated 60 days from the date the non-withdrawing Party actually receives the notice of withdrawal from the withdrawing Party. In case of an abrupt withdrawal when the event is to start or is in process the Party must cooperate to fulfil the event and make it successful.
3. The Parties agree that if withdrawals at any time from this MoU previous student data submitted by will remain with the parties. If the data is to be used it will be used with mention and would be communicated to the concerned Party before use. Sensitive data cannot be used.
4. By mutual agreement, which may be either formal or informal, the Parties may modify the list of intended activities set and/ or determine the practical manner by which the goals proposes and activities of this MoU will be accomplished. However, any modification to any other written part of this MoU must be made in writing and signed by both the Parties and their designees.
5. Nothing in this MoU shall be construed to authorise or permit any violation of any government, state or local/ UGC or University Law imposed upon the Parties.
6. The Parties will not compel each other that could lead to any legal hassle. Every Party has right to share the information they feel worth sharing. It is no binding on the Parties to share each and every information.
7. The issues with intellectual property right can be shared only with prior permission of the concerned Party.

6.0 TERMINATION. Unless terminated by a written agreement executed by either Party, this MOU shall remain in effect.

7.0 AUTHORIZED SIGNATORIES. The Parties hereby agree to the said MOU, which shall be effective

*The First Party Authorities and Principal of Respective colleges & IQAC Coordinators.

SIGNATURES OF THE AUTHORITIES

Sr. No.	Name of the Organization	Signature of the Authorities	Signature of the Authorities	Company Seal Seal/Stamp
1.	MANN DESHI FOUNDATION			Co-ordinator माण देशी फाँडेशन, म्हसवड शाखा - नाशिक
2.	Nashik Shikshan Prasarak Mandal's Arts and Commerce College, Igatpuri.	(In charge Principal) 	(IQAC Coordinator) 	

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