

NewsLetter

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MEGHA FOOD COOPERATIVE SOCIETY

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For a Healthier Future –
Where Passion meets Taste

Science of Mushroom & Sustainable Development Goals

Addressing unemployment and malnutrition in tribal region of North Garo Hills, Meghalaya

PROJECT FUNDED UNDER SFURTI SCHEME OF MINISTRY OF
MICRO SMALL & MEDIUM ENTREPRISES (MSME),
GOVERNMENT OF INDIA

AND FURTHER SUPPORTED BY GOVERNMENT OF MEGHALAYA



Megha Food – The CFC – Progress so far

Oyster mushroom cultivation in Meghalaya- building the foundation step-by-step



Mushroom Farmer Training – Need & Importance

Teaching crucial skills to our farmers, especially women farmers to address the issue of nutrition and economic independence at the same time



Mushroom Cultivations – Your Questions Answered

The little bag is fully inoculated and ready to fruit, so that you don't have to worry. However, here's some guidance to help you farm like an expert.

FARMER TRAINING – NEED & IMPORTANCE

Megha Food's efforts in the North Garo Hills region are centred on providing mainly the women farmers with the necessary skills in all elements of oyster mushroom farming.

In this issue, we'll talk about why these trainings, particularly the training of women farmers in general, are so critical for increasing food sovereignty and output resulting in improved health & nutrition in North Garo Hills and across the state of Meghalaya.



LOW POPULATION DENSITY & LOW-QUALITY INFRASTRUCTURE MAKES IT CHALLENGING TO DELIVER FINANCIAL SERVICES AND TRAINING TO FARMERS. MEGHA FOOD HAS BUILT LOCALIZED NETWORK OF LOCAL SERVICE PROVIDERS (LSPs) WHO DELIVER TRAINING & EXTENSION SERVICES TO FARMERS USING DIGITAL SERVICES (GREENQUBE)

WHY TRAININGS AT ALL

Farmers are taught crucial skills through trainings like the ones provided by Megha Food. Farmers are taught how to correctly use new technology, and women (in particular) are taught about the financial side of mushroom farming, allowing them to profit from their self-earned wages. All components of such training enable farmers to be more productive not only in terms of mushroom cultivation, but also in terms of leveraging their crop once it has been cultivated and harvested. Trainings help to close the gap between the quantity of effort put in and the output of most farming in North Garo Hills Region.

FARMER – TO – FARMER TRAINING (LSPs)

Megha Food has established networks of Local Service Providers aka Farmer Support Agents who operate within rural areas to provide training to farmers to help them improve their abilities. Farmers may use these networks to learn about best practises, find answers to their crop-related questions, and connect with the CFC, reliable buyers and suppliers.

The trainings thus being provided are essential for increasing smallholder farmer yields and, as a result, improving production yield/ reducing losses and supports in addressing the ever-growing issue of health & nutrition to every child in the region.

WHAT DO LSPs DO?

Delivers best practices in mushroom cultivation to farmers throughout & to some of the hardest-to-reach regions in NGH. Approach is, deliver rural trainings at a low cost.

Captures vital information for financial institutions to reduce the risk of reaching and serving more farmers using digital tools and platforms LSPs, collect farmer profiles to develop farmers' livelihoods and cash flows, helping financial institutions design better products for our farmers.

Builds local leadership and negotiating power so that farmers have stronger links to value chain services, increasing their profits with each harvest.



FROM THE EDITOR'S DESK

Dear Farmers & Friends,

We are excited to share that Megha Food has been growing & has started to become visible now. This issue is first in our publication series focussed on Farmer-to-Farmer training – Spotlights – centred on technical skill building and motivation. In this featured pilot program, women farmer members have been our prime focus and the training equips them with knowledge and skill to become agents of change. This women's network has potential to empower many more rural women in the region.

Efforts are on to support our farmers in increasing their farm income thereby improving household well-being and diet.

As we move ahead, we want to thank all our supporters, readers and well-wishers for their help and trust in us. Please continue to support us like this and we will be delighted to share the outcomes with you.

With Thanks & Best Wishes

Editor in-Chief

PARTNERING IN GOOD AGRICULTURE PRACTICES TRAINING

Very few persons in remote agricultural communities have received formal education or technical training in mushroom cultivation BEST PRACTICES. Megha Food assists its farmers in the organisation and delivery of appropriate extension services required. LSPs and with support from other local market actors enable these services, which advise farmers on best agricultural methods for their individual crops. As a result of these trainings, farmers:

Increase their Yield: Learning how to use inputs effectively can boost their output significantly throughout the cycle.

Develop their production management skills: Farmers learn how to better manage both the commercial and agricultural elements of their production unit through training.

Increase your earnings: Farmers can earn more at harvest and repay their loans in full without compromising their household's cash flow if their yields improve significantly.



WOMEN'S ECONOMIC EMPOWERMENT THE FOCUS

Women and girls have been kept back from realising their full potential for far too long. Women are disproportionately excluded from full and equal involvement in their communities and economies due to legal, social, cultural, and economic inequities, leaving their potential untapped. But, when women are equipped with resources and opportunities, everyone benefits. At Megha Food, we are creating opportunities and supporting our women farmers to become economically independent backed with skills and knowledge. Megha Food is supporting its women farmer members by:

Engaging them and teaching them technical skills like how and when to start mushroom cultivation, when to pluck etc.

In addition to productive skills, Megha Food also provides training in livelihood skills, provide opportunities for young educated girls, supports in access to finance etc.



USING POWER OF TECHNOLOGY TO MAKE FARMER ENGAGEMENT BETTER

Low-cost methods are required to reach rural clients, especially in Garo Hills region of Meghalaya, where communities are dispersed, and institutions, banks, service centres all are scarce. To bridge the gap and provide workable solution for our farmer members, Megha Food has created online platform with support from GreenQube – a 360° farm value chain ERP system supporting farmer welfare and prosperity.

It provides our farmer members with portal access for the management, and handheld access for the field staff and farmer. A ready-to-use Android based App, GreenQube allows Megha Food to enrol its field staff and farmers into the dedicated platform, get their geo-locations, crop and land details – and communicates with its farmer members on various mushroom cultivation practices, crop and disease problems etc.

Farmers can get inputs from Megha Food on training, weather, price at factor gate as well as in nearby markets, transportation support and much more. The entire interface is available in English as well as local language (Garo) either of which the farmer can choose from. The App is inbuilt with following features:

- Farmer Registration & Onboarding Process
- Q&A system
- Weather Advisory System and Dissemination
- Farmers' Profile and Cropping Plan
- General Information Dissemination
- Marketing Information Dissemination'
- Development of Visualization Platforms and Roles
- Banking linkage for direct fund transfer both ways

CONNECTED WITH OUR FARMER'S 24X7

OYSTER MUSHROOM AN ECONOMIC & NUTRITIVE ALTERNATIVE FOR RURAL WOMEN

Mushrooms are considered as gods' food and miniature pharmaceutical factories. According to the United Nations Food and Agriculture Organization (Reduce rural poverty, 2018), most of the world's impoverished people reside in rural areas, where hunger and food insecurity are the most common manifestations of poverty. Several governments throughout the world promote the growing of edible fungi as a means of offering nutritious alternatives and earning opportunities for those living in rural regions to help reduce poverty. In rural India, Oyster mushroom cultivation is seen as an alternative source of income for farmers, as well to supplement their daily diets with high-quality protein to combat hunger. It not only has the potential to provide jobs in both semi-urban and rural locations but also helps in improving farmers' and families' socioeconomic conditions, as well as ease employment issues for both literate and uneducated people, particularly women in rural areas.

Megha Food, in Meghalaya state is using the opportunity made available by growing these edible fungi for addressing nutritional as well as economic needs of the rural population in the region. While building the eco system, it is imperative that we understand the problems faced by our farmer members as well as their motivation in getting involved in mushroom cultivation to address them from beginning. Unavailability of good quality straw, poor quality mushroom spawn, low market pricing per kilogramme of mushroom in local area, limited extension, and consulting services were among the most observed challenges experienced by the women farmers. Whereas the primary motivation for our women members to get involved in mushroom farming was mushroom maturity speed, market availability through Megha Food, mushroom health advantages, and of course to make additional money. There were more reasons cited during discussion, but the primary and important ones were as above.

Keeping the above in mind, at Megha Food we use an interdisciplinary approach to implement *Pleurotus ostreatus* cultivation, design a business plan, supports its farmers with inputs and outputs and helps in constructing mushroom sheds (standardized modules), by training local people in the same (providing an additional income opportunity for the local people).



LSP TRAINING & EXPOSURE VISIT – IN PHOTOS



130 LSPs/ SPV MEMBERS WENT ON EXPOSURE CUM TRAINING VISIT

SPV Members along with its President & Secretary join for the Exposure visit with 40% women participants

Exposure visit to: Livihood Ashram, Bakhrapara, Rani, Assam (Training & Demonstration Unit – An initiative by Mushroom Development Foundation)

IN-HOUSE TRAINING FOR OUR MUSHEOOM FARMERS

90+ Farmers trained at MMCS with Technical support from Dr. Rongsentemjem Ao (Sr. Techincal Assistant, NEHU, Tura)





ADDRESSING YOUR CURIOSITY

HOW DO I STORE THE BAG?

You can do the same thing as us and hang it on something (bamboo poles etc). It can, however, be placed on a table or other flat surface. You can lay it flat. It does not matter.

WHEN WILL MY BAG PIN?

Because the bag is sold at an advanced stage of colonisation, it should begin pinning in about a week. If it doesn't, try some of the suggestions below. It could potentially pin sooner, so keep an eye out. When it starts pinning, you'll need to take extra care.

WHAT DOES PINNING LOOK LIKE?

Around the holes, you'll see an increase of activity and growth. Mycelium thickening and the formation of small white matchstick or pin forms. This is mushroom Primordia. Increase your attention to detail.

WHAT IF MY BAG DOESN'T PIN?

If you think it's taking too long and the bag is looking overcrowded, make it believe it's autumn.

- Raise or reduce the temperature by 5 degrees or so to give it a shock. For example, if it's cool outside, you may leave it outside overnight, or put it in a warmer place.
- Increase the amount of humidity and fresh air in the room.
- If you're still unsure, call Megha mushroom's helpline:

DOES IT NEED DARKNESS?

No! Because these mushrooms naturally grow in the deep shade of a forest, moderate indoor light should suffice.

WHEN SHOULD I HARVEST?

Best time is as the cap flattens or when you start to see the gills under the cap. As the cap starts pointing upward it will start to spore. Otherwise, the moment you see mushrooms spore, harvest them, else they will make a mess and the fruit may deteriorate more quickly. They are still good to eat, but kind of like overripe fruit, they will deteriorate more quickly, and the flavour may be affected.

HOW DO I HARVEST?

Clusters of oyster mushrooms are common. When several individual mushrooms in the cluster seem ready, gently take the entire cluster off with your hand. Simply move your fingers beneath the cluster, palm out, and peel it off gently. Other clusters may not be available yet, so wait till later to choose from them. You can harvest the bag over several days in this manner. In case the rest of the cluster does not appear to be ready, you can carefully cut individual mushrooms off.

WHAT TEMPERATURE IS THE BEST?

Mushrooms prefer a comparable temperature like you and me. As a result, if you're at ease, your mushrooms will be as well. However, they enjoy a humid climate. In winters, it develops well in temperatures between 10 and 24°C, while in summer between 10 and 30°C.

HOW CAN I MANAGE HUMIDITY?

The most basic method is to mist with a misting spray bottle. It's better to mist than to soak. Do this multiple times during the day. If you're really into it, you could create a humidity dome out of a huge plastic bag to capture evaporation and raise the humidity. Make sure, though, that it is still getting lots of fresh air. **LOW LIGHT & HIGH HUMIDITY (95% -100%) IS THE KEY.**

ADDRESSING YOUR CURIOSITY

CAN I GROW IT OUTSIDE?

Yes... but no! It will grow, but the fruiting will be poor because the conditions are more difficult to control. You'll also have to deal with bugs and the possibility of other animals stealing the tasty treats first.

HOW MANY MUSHROOMS CAN I EXPECT?

A 2 Kg bag should produce about 700 gms on first flush, 500 gms on the second and 200 gms on the third. But your production may vary. You will get several harvests (picking) per flush.

WHAT SHOULD I DO AFTER BAG IS FULLY HARVESTED?

The bag will need to rest after picking off, or harvesting, all of the mushrooms from the 'flush.' This resting period could last a few days or a week, after which it will begin pinning again. Because it's in a vegetative condition while resting, you can treat it the same way you did when you first obtained it.

HOW LONG WILL THE BAG LAST?

All good things, unfortunately, must come to an end. Over a period of 4 to 6 weeks, the bag should last about 3 or 4 flushes. With each flush, the bag may get noticeably lighter. This is due to evaporation through the holes and the water that the mushrooms use to grow. You might try soaking the bag in cold water for an hour to revive it and give it another flush. When the bag is empty, put it in the compost bin or shred it to use as garden mulch.

HOW LONG WILL THE PICKED MUSHROOMS KEEP?

If the mushroom is for self-consumption, then put them in a brown paper bag, and put it in the fridge as soon as possible. It may last upto a week. In general, the shelf life of fresh pick is about 8-11 days at 0 °C, about 4-6 days at 5 °C, about 2-3 days at 10 °C and about 1-2 days at 20 °C. During storage, clean food grade film packaging prevents the deterioration of mushroom appearance, texture, and discoloration.

WHAT SHOULD I DO IF SOME CONTAMINANT LIKE MOLD APPEARS?

If something does mistakenly get into the system, the mycelium should be able to handle it. In this situation, you may see the mushroom release metabolites, which appear as a brown stain, and witness an age-old conflict of nature. This is the immune system of the mushroom, as well as a bio-available property that stimulates our own immune system and is employed in medicine as antibiotics. The quality of the fruit is unaffected by mould. It will remain in the bag rather than the mushroom itself. However, because the mushroom will expend some energy combating the intruder, the mushroom's output may be reduced significantly.

WHAT DOES THE MUSHROOM BAG CONTAIN?

Your bag will be inoculated with cultured mycelium of Pearl Oyster Mushroom aka *pleurotus pulmonarius*. This is mixed with clean, chopped, soaked, steamed, and cooled rice straw. We also use lime to maintain the PH, which impedes and mould until the mushroom mycelium has grown (within 3 weeks) and can deal with intruders (if any).

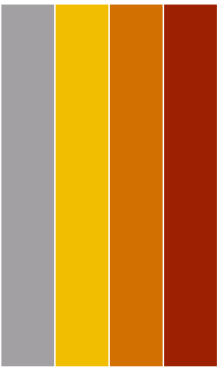
WHAT DOES THE MUSHROOM BAG NOT CONTAIN?

Chemicals or any other material that is not healthy and/ or natural. MFCS keeps everything clean, hygienic and uses organic materials whenever possible. There are absolutely no pesticides or herbicides.

WHAT TO DO NEXT?

Take pictures and videos of your produce and post it on our platform, youtube, share in the group with friends to show the success you're experiencing as a Mushroom farmer.





PROJECT PARTNERS



- Funding Agency: SFURTI Scheme of Ministry of Micro Small & Medium Enterprises (MSME), GoI
- State Support Agency: Meghalaya Basin Management Agency (MBMA), GoM
- Nodal Agency: Indian Institute of Entrepreneurship (IIE), Guwahati
- Technical Agency: Madhukar Livelihood Foundation, New Delhi
- Implementing Agency: Mendipathar Multipurpose Cooperative Society, NGH, Meghalaya