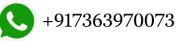


Webinar workshop on mushroom cultivation & marketing

- Overview Various Aspects of mushroom cultivation
- Various types of mushrooms
- Growing Technology
- Profitability
- Marketing





BM Mushroom industries is an enterprise dedicated towards research and development of sustainable cultivation of various mushrooms and spawns. We believe that mushroom the ultimate super food has tremendous potential towards saving this planet.

Our services: Training courses in varieties of mushroom & mushroom spawn & consultancy services

We are manufacturer & supplier of high grade mushroom spawns, mushroom cultures & mushroom food products.



My name is Biprojyoti Bhowmik, Fomer Engineer, Banker. www.bmmushroom.com

+917363970073

Master trainer mushroom technology at KVK, UBKV, Coochbehar, WB & Founder of BM Mushroom



a. Name of the Technology	Liquid Mushroom Spawn Production Unit				
Details of the Technology	Mr. B. Bhowmik developed liquid culture consisting of starch dextrose and honey (combination) which contributed to nutrition enhancement of mushroom spawn as well this liquid culture inoculated with mycelium could be directly injected to fruiting bags.				
A b. Name of the Technology	Low cost and bulk production of Mushroom spawn Production unit				
Details of the Technology	Mushroom spawn lab with capacity of 1 ton daily production developed indigenously. Helping hundreds of fellow farmers with quality mushroom spawn of various categories like OYSTER, MILKY, BUTTON				
c. Name of the Technology	low cost waste sterilization machine				
Details of the Technology	Waste substrate low cost sterilization machine, indigenous developed.				
d. Name of the Technology	Innovative Food processing unit				
Detail of the Technology	Food processing unit was developed for mushroom noodlesmaking, mushroom health drinks, mushroom products like pickle etc. developed.				





















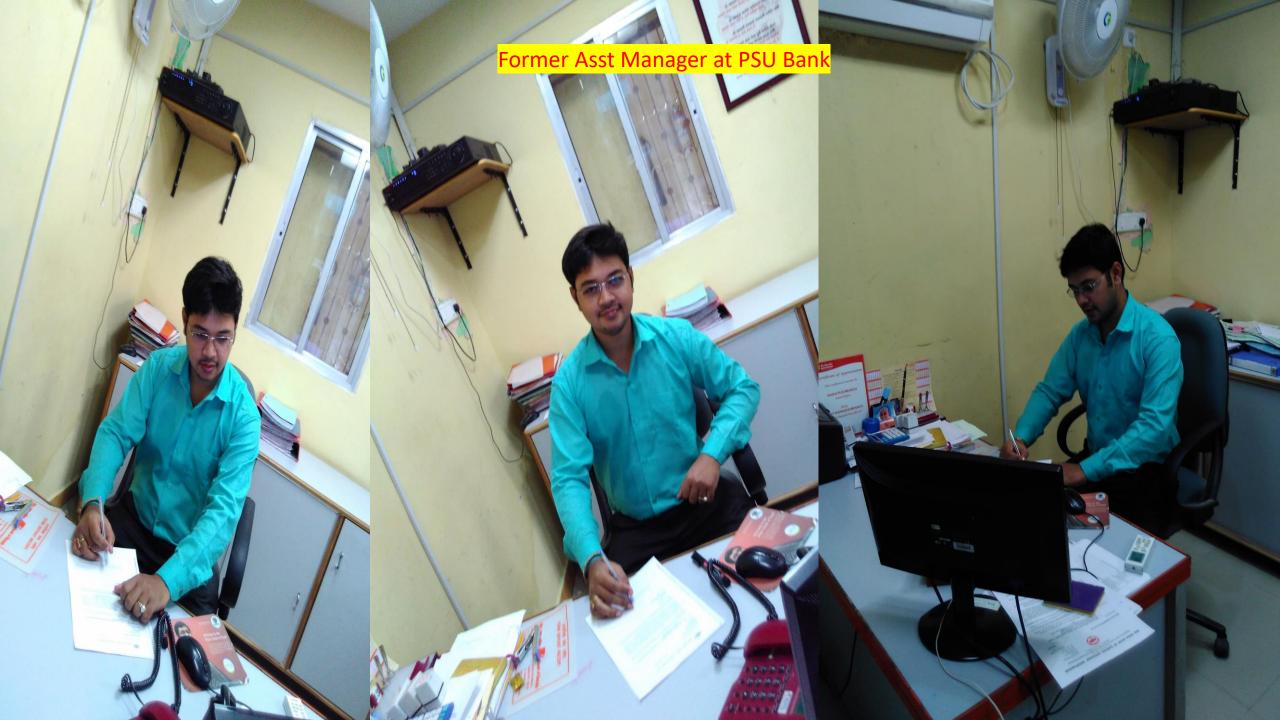






















FARM INNOVATIONS UNDER KVK +917363970073

















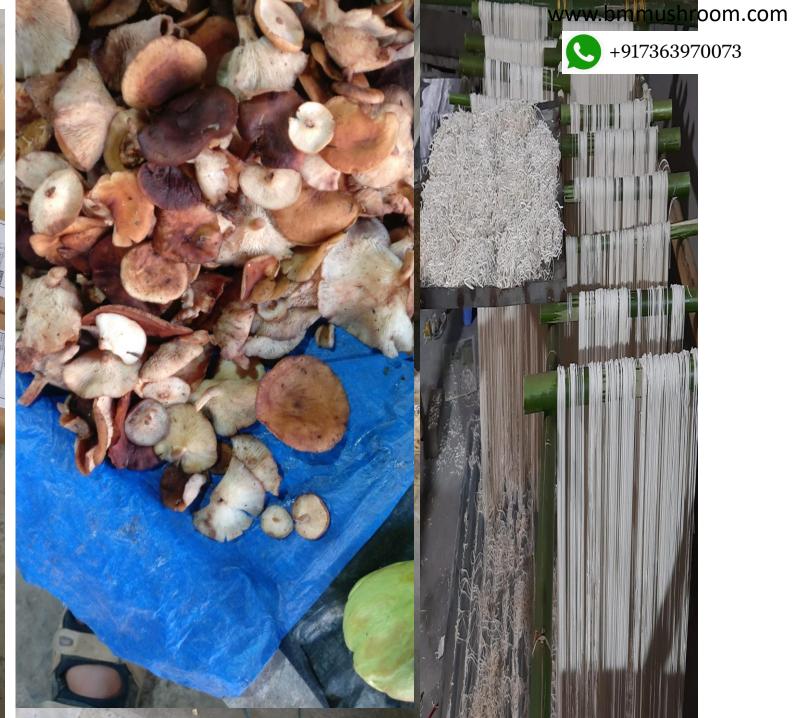




























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TO WHOM IT MAY CONCERN

Sub: Forwarding application for consideration of Jagjivan Ram Abhinav Kisan Puruskar/Jagjivan Ram Innovative Farmer Award 2020 –reg.

I have the pleasure to forward the application of Shri. Biprojyoti Bhowmik, son of Shri. Bijon Bhowmik at Village- Jatrapur, District- Cooch Behar, West Bengal for consideration of 'Jagjivan Ram Abhinav Kisan Puruskar/Jagjivan Ram Innovative Farmer Award 2020'. Mr. Bhowmik is an innovative agri-entrepreneur and has been able to achieve remarkable success in adopting organic mushroom cultivation technology, mushroom spawn production, value addition and online marketing and further diversified his activity towards nursery management. Shri. Biprojyoti Bhowmik deserves the recognition of 'Jagjivan Ram Abhinav Kisan Puruskar/Jagjivan Ram Innovative Farmer Award 2020 at National level.

I wish him every success in his endeavour.

(S.K. Roy)



Core Team

Biprojyoti Bhowmik

B.Tech. (EC) from IETE DELHI,

JOB: Former Assistant Manager at Bank of Baroda,

Agri-Entreprenure (2018- Continue)

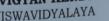
Amit Biswas

B.Sc (Hons.) Horticulture

Uttar Banga Krishi Viswavidyalaya



COOCHBEHAR KRISHI VIGYAN KENDRA



UTTAR BANGA KRISHI VISWAVIDYALAYA PUNDIBARI- 736165

> COOCHBEHAR, WEST BENGAL Email: cobkvk@yahoo.co.in

Mr. Suraj Sarkar Senior Scientist & Head (In-Charge)

Ref No. KVK/COB/2019-20/23

Date: 11.05.2020

TO WHOM IT MAY CONCERN

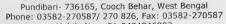
It is hereby declared that Mushroom spawn unit B. M. Enterprise, Rajarhat is working under the technical guidance of Cooch Behar Krishi Vigyan Kendra, UBKV, Pundibari, Cooch Behar, West Bengal.

The procedure used is GMO free and adhering to the Phytosanitary practices.



COOCHBEHAR KRISHI VIGYAN KENDRA

UTTAR BANGA KRISHI VISWAVIDYALAYA



Mobile No. +91-9434946097

Email: cobkvk@yahoo.co.in; coochbeharkvk@gmail.com website: www.ubkv.ac.in

Dr. Bikash Roy Senior Scientist & Head

Ref. No. KVK/COB/20-21/ 233

Date: 09.12.2020

TO WHOM IT MAY CONCERN

This is to certify that Sri Biprojyoti Bhowmik, son of Sri Bijon Bhowmik residing at Jatrapur, Rajarhat, Cooch Behar has been acting as 'Master Trainer' of different training programmes on Oyster Mushroom Production conducted by Cooch Behar Krishi Vigyan Kendra, Uttar Banga Krishi Viswavidyalaya since couple of years. Moreover, Sri Bhowmik has also participated in different extension activities of KVK at State and National level.

Sri Bhowmik has developed himself as an young entrepreneur on mushroom spawn and mushroom production with strong commitment and aspiration which made him a role model before the young generation.

I wish him success in all his endeavour.

Coochbehar Krishi Vigyan Kendra Uttar Banga Krishi Viswavidyalaya Pundibari, Coochbehar, Pin - 736165



COOCHBEHAR KRISHI VIGYAN KENDRA

UTTAR BANGA KRISHI VISWAVIDYALAYA

Pundibari- 736165, Cooch Behar, West Bengal Phone: 03582-270587/ 270 826, Fax: 03582-270587

Mobile No. +91-9434946097

Email: cobkvk@yahoo.co.in; coochbeharkvk@gmail.com

website: www.ubkv.ac.in

Dr. Bikash Roy Senior Scientist & Head

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I wish him success in all his endeavour.

Senior Scientist & Head

Senior Scientist & Head Coochbehar Krishi Vigyan Kendra Uttar Banga Krishi Viswavidyalaya Pundibari, Coochbehar, Pin - 736165 SI. No. SP/09/02/19

Certificate of Recognition





DEPARTMENT OF PLANT PATHOLOGY UTTAR BANGA KRISHI VISWAVIDYALAYA P.O. Pundibari, Dist. Cooch Behar West Bengal 736165

This certificate is awarded to

Amit Biswas

S/O Ashoke Biswas, Vill. - North Bagna, P.O.+ P.S.-Gaighata, Dist.-North 24 Parganas, Pin-743249, West Bengal

for participation in the Certificate course on Mushroom Spawn production at Department of Plant Pathology, Faculty of Agriculture, U.B.K.V., Pundibari, Cooch Behar from 13.11.2019 to 12.12.2019

Course Co-prdinator

Date

Date

Head, Repartment of Plant Pathology, UBKV

Date

Dean, Faculty of Agriculture, UBKV

UTTAR BANGA KRISHI VISWAVIDYALAYA FACULTY OF HORTICULTURE

PUNDIBARI, COOCH BEHAR, WEST BENGAL-736165, INDIA

Prof. Prodyut Kumar Paul Dean



Mobile : 80

: 7001363247

: deanhort@ubkv.ac.in : prodyut24@yahoo.com

Ref. No.: UBKV/Hort./ 843 (iv)

Date: 05.10.2020

TO WHOM IT MAY CONCERN

This is to certify that **Amit Biswas (Registration Number: H-2016-24-B)** son of Shri Ashoke Biswas, has been a bonafide student of **B.Sc. (Hons.) Horticulture** programme under Faculty of Horticulture, Uttar BangaKrishiViswavidyalaya, Pundibari, Cooch Behar from 27th July, 2016 to 30th July, 2020.

He has successfully completed **Student READY- Experiential learning programmes** in 8th semester of B.Sc (Hons.) Horticulture degree programme.

He has successfully accomplished two experiential learning programmes named

- i. Protected Cultivation of High Value Horticulture Crops.
- ii. Mass Multiplication of Plants and Molecules through Tissue Culture.

So far as my knowledge goes he bears a good moral character. I wish him every success in life.



University Seal

Place: Pundibari, Cooch Behar Date: 5th October, 2020 Faculty of Horticulture Uttar Banga Krishi Viswavidyalaya

Faculty of Horticulture
Uttar Banga Krishi Viswavidyalay
Pundibari Cooch Behar
Pin.-736165

COOCH BEHAR KRISHI VIGYAN KENDRA



UTTAR BANGA KRISHI VISWAVIDYALAYA Pundibari, Cooch Behar





sri/smt Amit Biswas		Son/Doughter/ W	ife ofA	dioke	Biswas	
Address Vill- North Bayna	P.O - Graig	liata Dist -	North 24	Pongan	. W	
and successfully com	nleted the	days	duration	training	programme	entitled
Scientific Method of	Oyster Musi	hrom Spaw	n Prode	cetion	Orga	inized by
Cooch Behar Krishi Vigyan Kendra,	Uttar Banga kris	hi viswavidyalayo	1. from .20t1	n Jom to	20th Feb	, 2420

Shely

WHY GROW MUSHROOMS

- WASTE TO VALUE
- VALUE IN NUTRITION-DELICACY AND MONEY
- LAND CRISES-VOLUMETRIC FARMING
- WONDER CROP FOR FARMERS
- Unemployment-LOW INVESTMENT-COVID
- Food crises & Nutrition
- Environmental impact- pollution conrol-breaking complex

WASTE TO VALUE





Health Benefits of Mushrooms

- * Excellent source of Selenium which is good for the bladder
- * Rich source of Vitamins B2 & B3
- * Improve Immune Function
- * Low in Calories
- * High in Iron
- * High in Antioxidants
- * High in Vitamin D



They produces several lifesaving drugs like chemical compounds used in chemotherapy drugs, antibiotics

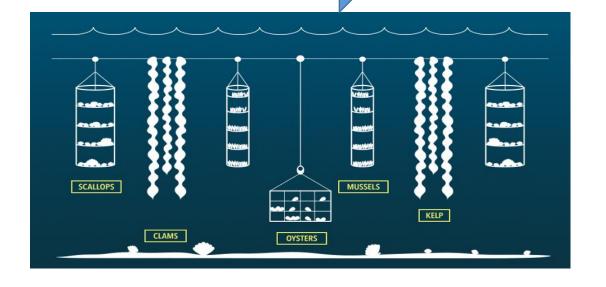
LAND CRISES-VOLUMETRIC FARMING







3 DIMENSION FARM

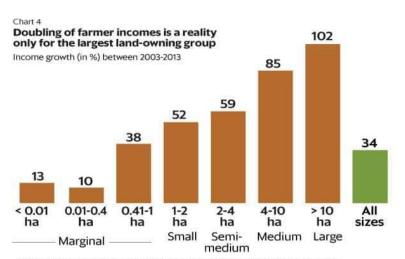






WONDER CROP FOR FARMERS

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Source: Agriculture Census, Census of India, Indira Gandhi Institute of Development Research

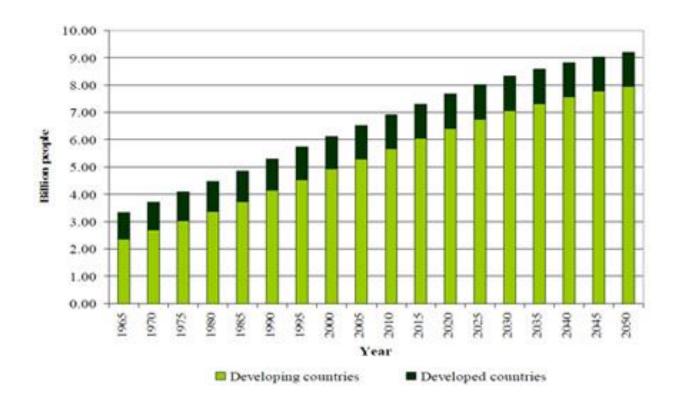


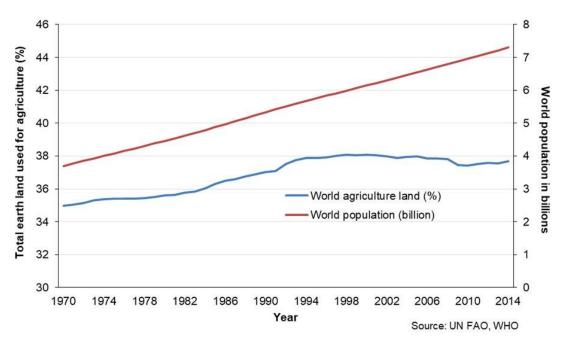




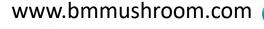
Can We Meet the World's Growing Demand for Food?

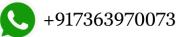
 With time planet population is increasing and cultivation land is shrinking.





FOOD CRISES & NUTRITION

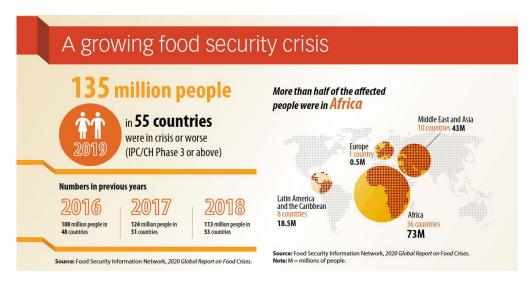






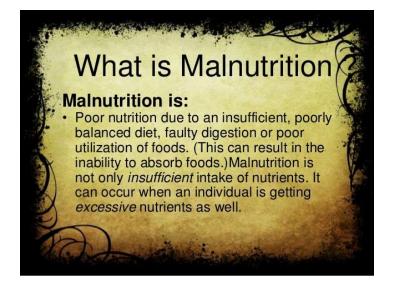


















DownToEarth

In mid-day meals

The Government of India has advised state governments to include mushrooms in the Integrated Child Development Services (ICDS) and Mid Day Meals (MDM) schemes.

The Union education ministry has started working on a plan to expand its MDM scheme to children in

kindargartan and to also affar broakfast. It has written to the states and Union territories for their successions

Government of West Bengal

FOOD

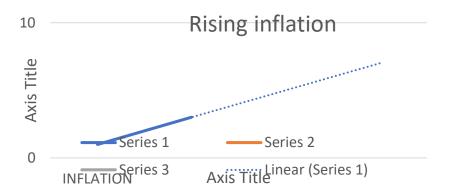
Why mushrooms should be included under ICDS and MDM scheme

Mushrooms in one's daily diet will eventually promote a healthy body, behaviour and brain power

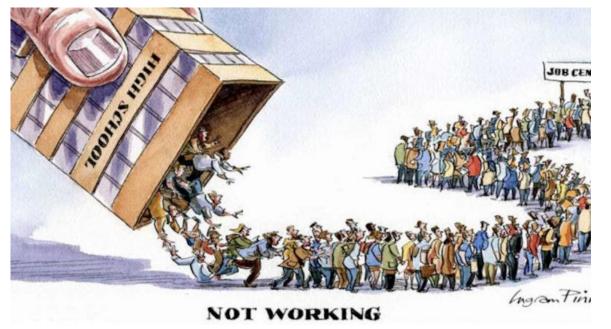
GOVERNMENT OF ASSAM
PANCHAYAT & RURAL DEVELOPMENT
ASSAM STATE RURAL LIVELIHOOD MISSION (ASRLM)

Value Chain for Mushroom Cultivation

BIG CHALLENGE OF UNEMPLOYMENT & IMPORTANCE OF ALTERNATE INCOME





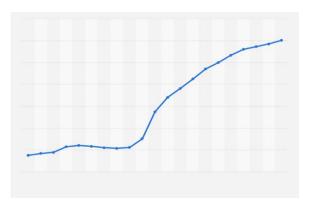


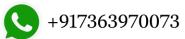
www.bmmushroom.com





UNEMPLOYEMENT





VALUE IN MONEY







PROFIT MARGIN AND INCOME SCOPE

- RETAIL PRICE OF OYSTER MUSHROOM VARIES FROM RUPEES 100 TO 450 PER KG.
- WHOLESALE PRICE VARIES FROM 60 TO 200 PER KG
- COST OF PRODUCTION VARIES FROM 20 TO 30 PER KG MUSHROOM
- PROFIT MARGIN 100 % TO 1000 %



KNOWLEDGE IS THE KEY



- Mushroom grower
- Food processor
- Spawn Maker
- Trader
- Substrate, Kit, equipments provider
- Sales platform- Offline-Mandi-Restaurants -Online-BM Community-Ecom- etc

Mushrooms have a solution for just about every man-made problem



In the midst of global warming, global desertification, deoxygenating oceans and Earth's sixth mass extinction crisis, mycologist and author Paul Stamets gives us seven reasons to hold out hope, and they all involve mushrooms.

In a still-relevant 2008 Ted Talk, he says mushrooms contain the solution to just about every major problem humans have created, from global warming, to oil spills, to plastic pollution.

Mushroom as pollution mask

By Emma Dai (HK Edition) Updated: 2010-09-10 07:06



Amy Lam manages a mushroom farm in New Territories. The farm produces pleurotus, a popular fungus, which is used in Chinese University of Hong Kong's experiments. Edmond Tang / China Daily

A team of Hong Kong researchers has discovered that mushroom serves as a hugely effective ally in the fight against air pollution. Now, a reserach team awaits the go-ahead for a full-scale testing. Emma Dai reports. For many, the mushroom is a gourmet food, a sensual delight, full of unexpected flavors. Researchers at Chinese University of Hong Kong (CUHK) consider the "mushroom barrier" a superb, natural defense for the future, against air pollution.

The team built its mushroom barrier along a major highway in the New Territories.

www.bmmushroom.com



Yes We Can



Mushrooms single handedly converts organic waste into a valuable substrate.

Mushroom farming utilizes volumetric space in farm.

Huge opportunity for entrepreneurs, house wife's, students and part time extra income opportunity.









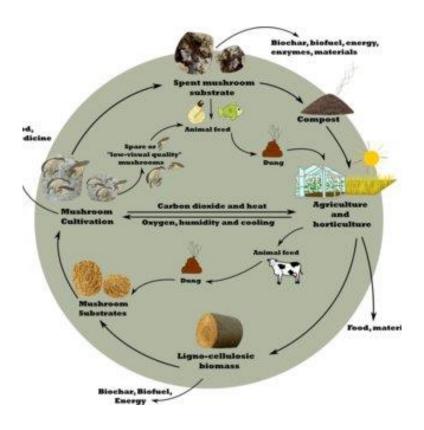




Wonder crop for farmers.

Could be grown in home . Doesn't requires huge capital.

Delicious rich food, nutrition



SCIENCE AND TECHNOLOGY OF MUSHROOM

• LETS KNOW IT FIRST

• What?

• Why?

• How ?

MUSHROOM THE WONDER SPECIES

Currently
there are over
10,000 known
types of
mushrooms

Millions unknown

Over 600
edible
mushroom out
of which only
few can be
cultivated
commercially











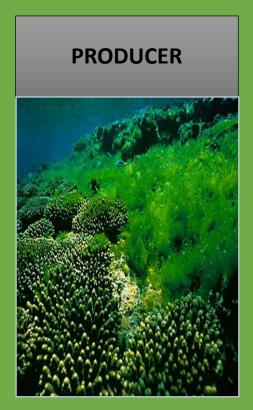




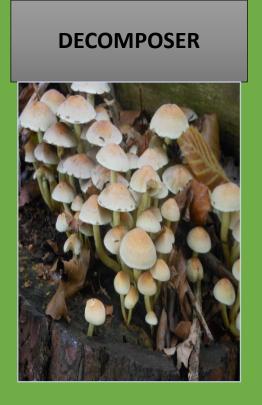


MUSHROOM ARE FUNGI!









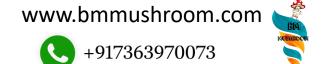
Decomposers

Fungi the primary decomposer

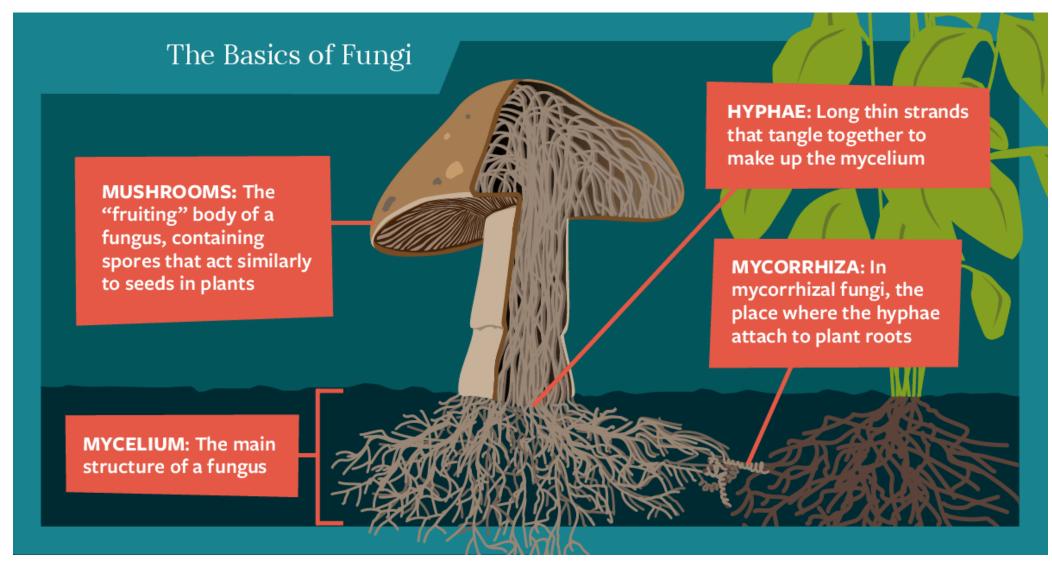
Fungi are plantlike organisms without leaves -present everywhere.

Mushrooms are one kind of fungus.

There are thousands of types of mushrooms



FUNG



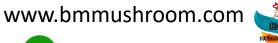
We can put these various species in one of 4 categories:

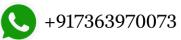
Mycorrhizae - Successful Partnering with Plants

Parasites - Feeding on the Weak

Endophytes - Unique Types of Mushrooms, Mysterious Symbiosis

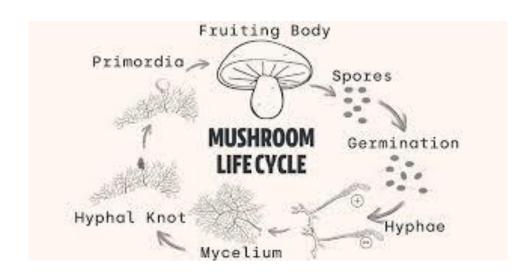
Saprotrophs - Thriving on Decay

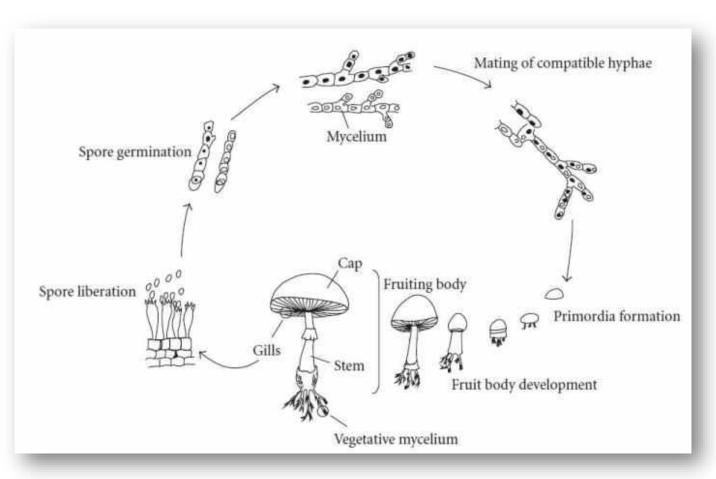




Phases:

- Spore germination
- Mycelium running
- Primordia Formation
- Fruiting Body Development





OUR FUNGI OF INTEREST

SAPROTROPHS

THRIVING ON DECAY/SUBSTRATE

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OYSTER

BUTTON

MILKY

REISHI

SHIITAKE

MAITAKE

TURKEY TAIL

GIANT PUFFBALL

CHICKEN OF WOOD

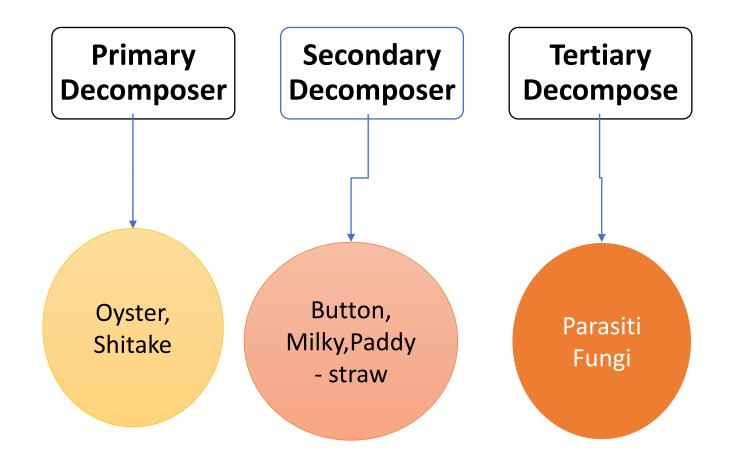
ENOKITAKE

SHAGGY MANE

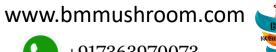
BLACK TRUMPET

YELLOW HOUSEPLANT

Classified into three different types according to their food habit



Types of Mushrooms Chart





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Cultivation instruction at bmmushroom.com



- Most versatile mushroom.
- Best for beginners.
- Several varieties to choose from.
- Grown throughout the year.

Winter Strains







King

Blue

Sajor

Summer strains



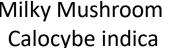


Milky Mushroom Calocybe indica

28-38 ° C 80-85 % Casing soil needed







Volvariella volvacea- Paddy Straw Mushroom







Cultivated in the temperature range of 28 to 38°c

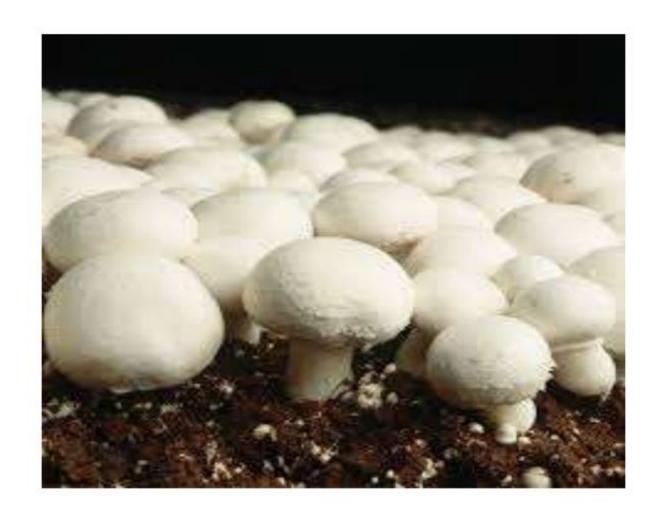
Relative humidity (RH) of 80-85 %

An excellent species for summer time.

It is a fast growing mushroom and under favourable growing conditions total crop cycle is completed with in 4-5 weeks time.

Button Mushroom

White button mushroom requires **20-25 C for vegetative growth** (spawn run) and 12-18 C for reproductive growth. Besides that it requires relative humidity of 80-90% and enough ventilation during cropping.





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These are also sometimes called baby portobellos, and they look similar to the white button mushroom except for their size, which is slightly larger. The Cremini mushrooms are also a light shade of brown, instead of white. They have a mild flavor, and they can be used in place of white button mushrooms if that's what your recipe calls for.



Portobello Mushrooms



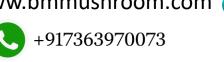
+917363970073

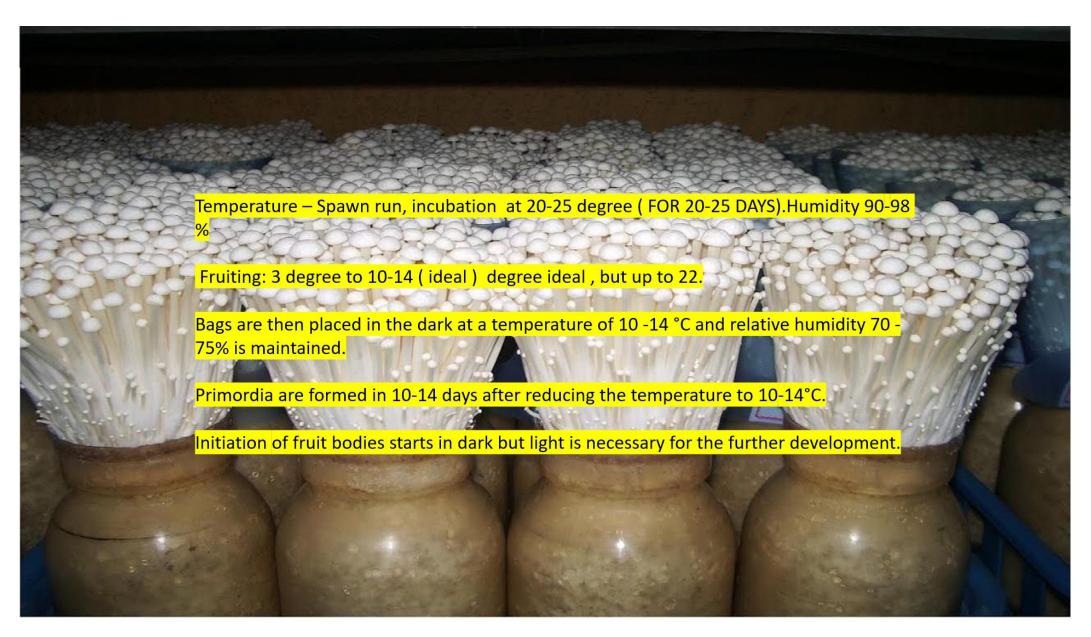
When white button mushrooms fully mature, their caps grow outwards and they are called Portobello mushrooms. With its mild flavor and somewhat meaty texture, you can even use these types of mushrooms as a substitute for meat in many dishes. Some people consider them one of the tastiest mushrooms in existence, and they are especially yummy when you grill them.

Portobellos grow in grasslands in Europe and North America.

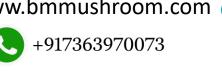


Enoki Mushroom www.bmmushroom.com





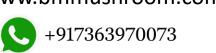
Shiitake Mushroom





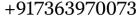
Cropping requires an optimum temperature of 22-26°C, humidity of 80-85%, diffused light and ventilation.

Shiitake mushroom grow kits, on the other hand, take about 3 months to fully colonize and then about 10 days to fruit.



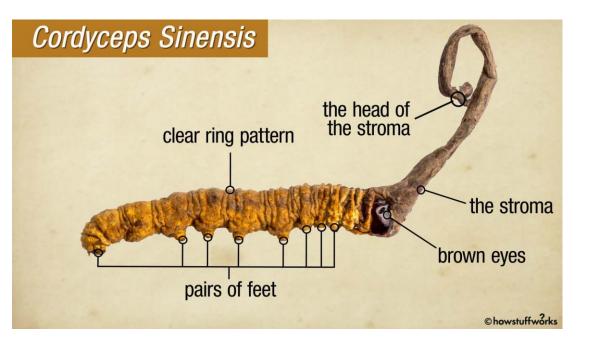
The Cordyceps Mushroom – Prince of Physical Energy Cordyceps Militaris







- Media
- •1 gallon water
- •1/2 cup starch
- •1/4 cup nutritional yeast
- •2 tbsp sugar
- •2 tbsp azomite
- •5 scoops baby food
- •Rice 2 TBSP



Temperature- 12 to 22 °C

Cordyceps sinensis

- phototropic and will grow towards any source of light
- Fruiting can take anywhere from 4-6 weeks.

Cordyceps militaris





The Lions Mane Mushroom – King of Brain Function

Hericium Erinaceus



Temperature: 18-21

Humidity 85% or higher

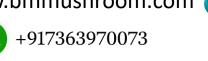
Lions Mane grows best on supplemented hardwood sawdust.



Colonization stage of around 14 – 21 days.

Hen of the Woods Mushrooms

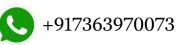




In Japan, these mushrooms are also called maitake mushrooms, and they have a lot of flavors packed into them. Found growing at the base of oak trees, Hen of the Woods mushrooms are used in both Japanese and Western dishes, and they are rich, earthy, and look similar to <u>a flower</u>. Perfect for stir-fry dishes and many types of soup, the mushrooms hold their shape well when cooked, making them a very attractive addition to many of your dishes.



Honey Agaric



The Honey Agaric mushroom is the world's largest living stretching up to 10 sq. km. underground and weighing around as much as a blue whale. Only the tip or a small percentage of the mushroom can be seen above ground.



King Trumpet Mushrooms



+917363970073

Sometimes called the King Brown mushroom or the French Horn mushroom, these are very thick and meaty mushrooms, and they are also quite large in size.



Morel Mushrooms



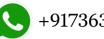
+917363970073

Morel mushrooms are rather unattractive, but they are delicious mushrooms that come alive with flavor when you eat them. They are rather chewy and look similar to a honeycomb. They are also quite savory and are especially delicious when you sauté them in butter. Morel mushrooms can be very expensive, and once you try them you'll understand why.

These mushrooms can be found on the edges of wooded areas in many states of the US (often growing around the base of dead or dying trees).



Porcini Mushrooms



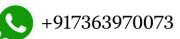


Porcini mushrooms are very meaty and flavorful, and they are often found in numerous Italian dishes. Much like sourdough, Porcini mushrooms have a flavor and taste that is creamy and nutty, and they are light brown in color. They are also sold either canned, dried, or fresh, but the dried mushrooms need to be soaked in hot water for at least 15 minutes before you cook them. In addition, Porcini mushrooms can get up to 10 inches across, so they get quite large at times.

Simple to cook with, the Oyster mushroom can be used in a variety of dishes. They also come in colors such as grey, brown, and even a reddish color, and the younger they are, the more

flavorful they are.





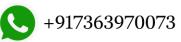
The Turkey Tail Mushroom – King of Immunity *Trametes Versicolor*





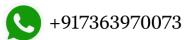
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The Reishi Mushroom – Queen of Immortality Genoderma Lingzhi



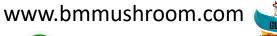


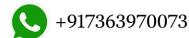










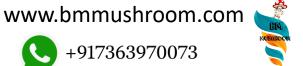


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Course- What , why , how ?

Eng-Hindi

- Skills & knowledge it will impart.
- COURSE CONTENT-COURSE DESIGN-CHAPTERS-SKILLS YOU WILL GAIN- COMMUNITY SUPPORT-THE IMPORTANCE OF KNOWLEDGE- ONLINE-OFFLINE-Special coverage on marketing & food processing, Pest & Disease Control.
- COURSE INCLUDES: Training videos, Download materials, Live Classes, Practical Assignments, Quiz, E-Book, Community Support and much more.
- HOW TO GET MAXIMUM OUT OF THE COURSE
- What's next?



Vision-journey-community

Marketing It's called the seven Ps of marketing

PRODUCT- Knowledge

PRICE-low cost

PROMOTION- BM mushroom FB,wp

PLACE

PEOPLE

PROCESS

AND PHYSICAL EVIDENCE



Any question, suggestion, feedback?

Put it in comment section.