

Mushroom Spawn Production Laboratory, Khanapara, Guwahati -22

Spawn i.e seed of mushroom consists of mycelium of the fungus grown on suitable substrate like cereal grains. It the key input of mushroom cultivation like any other crop cultivation using their seeds. As the mycelia of mushroom fungus as such is not possible to propagate or mix into the main substrates of cultivation like straw, hence the mycelia are carried or multiplied on a carrier like cereal grains.

Non availability of spawn is the major constraint in mushroom production in Assam. To make the spawn available, Govt. of Assam has established the mushroom spawn production laboratory at Khanapara under the Directorate of Horticulture and Food Processing, Assam.

Apparatus, equipment, glass wares, chemicals and other items required for spawn production laboratory.

Sl. No	Items
1	Autoclave
2	BOD Incubator
3	UV Lamp
4	Sprit Lamp
5	Balance
6	Deep Freeze
7	PH Metter
8	Inoculating Needle
9	Thermo Metter
10	Bucked
11	Laminer Flow
12	Culture Tube
13	Funnel
14	Conical Flax
15	Measuring Cylinder
16	Wheat/Rice
17	Dextrose
18	Calcium Carbonate
19	Potassium Permanganate
20	Agar Agar
21	Rectified Sprit
22	Formal Dehyde
23	Distilled Water
24	Polythene Bag
25	Rubber Band
26	Non-absorbent Cotton
27	Hand Gloves
28	Bottle Brush
29	Apron
30	Mask

Steps In mushroom Cultivation:

1. Cut the Straw into 2-3 inches
2. Soak the Straw for over night
3. Drain out the water
4. Boil the Straw for 30 minutes
5. allow to cool down on clean floor
6. Collect pure mushroom spawn and break down the lump on a clean container
7. After making a 3-4 inch layer of straw in a polythene bag, sow the seeds.
8. follow the same procedure for second, third, fourth layer etc as required.
9. make some pores on polythene bag .
10. Tie the opening end of polythene and keep in a dark room for 12-15 days.
11. Spray water if necessary.
12. within 12-15 days mycelium will grow and the straw inside the bag will be white in color.
13. keep the bag on rack or hang it with rope.
14. Fruiting body of Mushroom will come out within 5-6 days.
15. after 7-10 days the fruiting body will reappear.

Steps in spawn production

1. Substrate preparation for mother spawn preparation.

- a. Wheat or paddy grains are used
- b. take 20 kg grains and soak them for 20 minutes in 35 lts of water , boil them for 20 minutes and keep stirring so that the grains donot break.
- c. drain the excess water and mix gypsum and chalk powder (for 10 kg dry grains ,200g gypsum and 50 g chalk powder are required)
- d. Fill this substrate in glass bottles (200g), flasks or polypropylene bags (400g or any convenient size) and plug them with cotton.
- e. Sterilize the bottles, flasks or poly propylene bags filled with substrate in autoclave (22 psi for 2 hrs) or in pressure cooker.
- f. After sterilization let it cool down. These can then be used for preparation of mother spawn.

2. Mother spawn preparation

- a. Transfer mycelia bits from petridishes to the bottles, flasks or polypropylene bags under aseptic conditions and incubate them at 25 degree Celsius in BOD incubators or can be kept at room temperature during congenial periods.
- b. Bottles should be shaken on 5th and 10th day and should be checked regularly for any contamination . Contaminated bottles should be discarded immediately
- c. Ones the bottles or flasks are completely full with mycelia growth ,it means mother spawn is ready and it can be used for commercial spawn production .
- d. Transfer 10 to 15 g of mother spawn in each sterilized polypropylene bags filled with substrate under aseptic condition (laminar flow or clean room).
- e. Incubate the bags at 25 degree Celsius in BOD incubators till the bags are full of mycelia growth . when the bags are fully covered with mycelia growth , they can be used for Mushroom cultivation .
- f. Prepared commercial spawn can be stored for few days under refrigerated condition .

Photograph showing different Machineries of Mushroom Laboratory under Directorate of Horticulture & F.P., Assam at Khanapara Campus



AUTOCLAVE



LAMINAR FLOW



INOCULATION CUM INCUBATION ROOM



DEEP FREEZE CHAMBER FOR SPAWN