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NAAC ACCREDITED 'A' GRADE



Topic : *Volvariella volvacea* Cultivation Technology

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Cultivation of paddy straw mushroom (*Volvariella volvacea*)

Paddy straw mushroom is also called *Chinese or Straw or Tropical mushroom*. It differs from *Agaricus* (*temperate or European mushroom*) in always having a cup-shaped persistent volva at the base of the stipe but never an annulus, and pink rather than sepia coloured spore print. Of the over 25 species known, *V. volvacea*, *V. diplasia* and *V. esculenta* are edible and are a well-known table delicacy in many parts of the world. They are very delicate and must be consumed fresh.

In India, the cultivation of paddy straw mushroom was first tried at Coimbatore and since then its cultivation has been taken over at other places. At present the cultivation of this mushroom is in progress at **Regional Research Laboratory, Jammu; National Botanical Research Institute, Lucknow; Agricultural Research Institute, New Delhi.**

Requirements

- Paddy straw
- Small water tanks
- Bricks
- Bamboo frame
- Arhar or gram powder
- Spawn of *Volvariella volvacea* (350-400 g of grain spawn/bed)
- Thermometer (0-100°C)
- Polythene sheets

Procedure

1. Collect paddy straw which is not very leafy, not more than one year old and not uncrumbled.
2. Store the straw at a protected place where it does not get wet during rain.
3. Make the bundles of paddy straw
4. Soak the bundles in water for 18-24 hours in small tanks, keeping in view that the bundles are completely immersed in water, by putting weight on the bundles
5. Take out the bundles from the tanks
6. Drain off the excess water.
7. Laying of Beds and Spawning:
 - (a) Make square beds (1 m x 1m x 1m or 1m x 0.75 m x 1 m) of the soaked straw bundles with their butt ends on one side placed length-wise close to each other on a bamboo frame supported on bricks. The number of bundles are to be placed in such a way that it approximates to the length of the straw, to make a square bed.

- (b) Make a second layer over the first layer by placing the bundles having the butt ends on the opposite side. An arrangement of this type makes one layer.
 - (c) Place small bits of spawn 7.5 to 10 cm inside the margin, leaving a space of 5 to 5.5 cm from each other.
 - (d) Place the third layer of straw bundles at right angles to the previous layer, i.e. in a criss-cross fashion.
 - (e) Place the fourth layer on the third layer with the opposite butt ends.
 - (f) Spawn this layer too as done earlier (in step c)
 - (g) Place another layer of bundles with butt ends at right angles to the previous one.
 - (h) Spawn this layer all over.
 - (i) Cover the inoculated layer with loose straw.
 - (j) Press down the bed.
8. Cover the bed with polythene sheets.
 9. Maintenance of temperature and moisture in the beds
Observe the beds for watering and temperature of beds. The bed temperature should remain between 30°C and 35°C after spawning and should not go below 30°C during growing season.

Observations

Remove the polythene sheet after 7 to 10 days of spawning for the appearance of small buttons.

10. Harvesting of mushrooms

Harvest the mushrooms, when the volva is about to rupture or is just ruptured, by gently twisting the fruiting bodies.

11. Preservation

The paddy straw mushrooms are consumed fresh but can be preserved either by dehydration or canning. Dry the mushrooms either in the sun or at a temperature of 50°C-60°C and pack either in aluminium foil or in polythene bags.