

# **BUTTON MUSHROOM**

Button Mushroom (*Agaricus spp.*) is the most popular mushroom variety grown and consumed the world over.

In India, its production earlier was limited to the winter season, but with technology development, these are produced almost throughout the year in small, medium and large farms, adopting different levels of technology.



## **CULTIVATION OF WHITE BUTTON MUSHROOM**

The following steps are required:

- Spawn production
- Compost preparation
- Spawning
- Spawn running
- Casing
- Fruiting
- Cropping and harvest
- Marketing

### **SPAWN PRODUCTION**

Spawn is produced from fruiting culture / stocks of selected strains of mushrooms under sterile conditions.

Stock culture may be produced in the lab or may be obtained from other reputed sources.

Fruiting culture is mainly imported from various places including foreign sources which give higher yield than Indian strains and the spawn is produced in the lab.

The spawn should be of good quality in terms of flavour, texture and size apart from having potential for high yield and longer shelf life.

## **COMPOST**

Compost is a selective decomposed substrate for growing white button mushroom.

Composting involves microbial decomposition of organic material, synthesis of microbial protein and conditioning of fibrous materials to absorb and retain moisture.

The microbial action not only induces changes in the physical and chemical properties of compost but also minimizes the growth of competitive microbes

## **COMPOST PREPARATION**

The substrate on which button mushroom grows is mainly prepared from a mixture of plant wastes (cereal straw/ sugarcane bagasse etc.),

- salts (urea, superphosphate / gypsum etc.),
- supplements (rice bran/ wheat bran) and
- water.

In order to produce 1 kg of mushroom, 220 g. of dry substrate materials are required.

Each ton of compost should contain

- 6.6 kg. nitrogen,
- 2.0 kg. phosphate and
- 5.0 kg. of potassium (N:P:K - 33: 10:25)

The ratio of C: N in a good substrate should be 25-30 : 1 at the time of staking and 16-17 : 1 in the case of final compost.

## **SPAWNING**

Spawning is the process of mixing the spawn with compost. Spawn is added to compost at the rate of 0.5% by weight and intimately mixed. Depending up on the growing system employed spawning is done by various methods.

### **TYPES OF SPAWNING**

- Double layer spawning:
- Top layer spawning
- Through spawning
- Shake up spawning
- Spot spawning

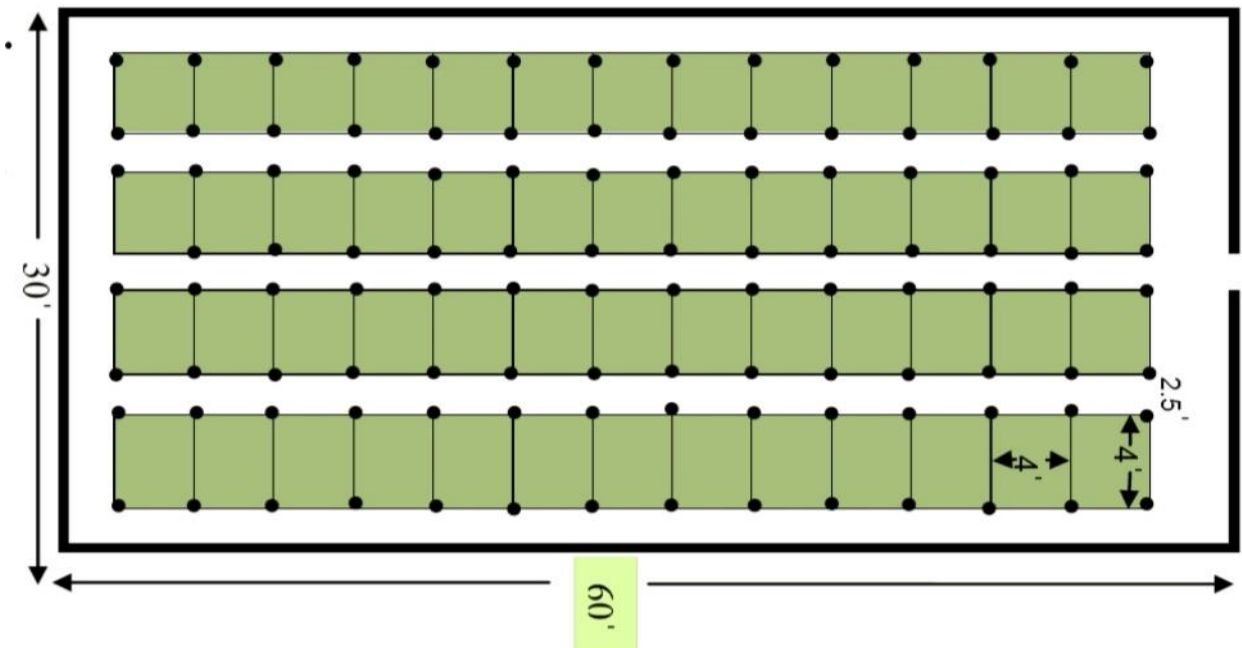
### **SPAWN RUNNING**

Spawn run takes 10 to 15 days for complete colonization of the compost. Spawn taken directly from the growing room (fresh spawn) grows faster than the spawn kept stored at 2°C.

### **CASING**

- Unfold the fully spawn run bag and make the top surface even by gentle pressing with hands.
- Light spray of water on spawn run compost.
- Application of 4-5cm thick layer of casing uniformly using iron rings of 4cm height or wooden blocks.
- Water spray in installments immediately after casing application

- Casing material (soil 75% + sand 25%) with pH adjusted to 7.8-7.9 with chalk powder is pasteurized in autoclave at 151b psi for one hour or chemically treated with formaldehyde soln. (4%) about a week in advance of casing.



**Lay out of mushroom shed commonly used for seasonal cultivation**

## **FRUITING**

Under favourable environmental conditions viz. temperature (initially  $23 \pm 2^{\circ}$  C for about a week and then  $16 \pm 2^{\circ}$  C), moisture (2-3 light sprays per day for moistening the casing layer), humidity (above 85%), proper ventilation and CO<sub>2</sub> concentration (0.08-0.15 %); the fruit body initials which appear in the form of pin heads start growing and gradually develop into button stage.

## **CROPPING AND HARVEST**

- Harvesting is done at button stage and caps measuring 2.5 to 4 cm. across and closed are ideal for the purpose.
- The first crop appears about three weeks after casing. Mushrooms need to be harvested by light twisting without disturbing the casing soil.
- Once the harvesting is complete, the gaps in the beds should be filled with fresh sterilized casing material and then watered.
- About 10-14 kg. fresh mushrooms per 100 kg. fresh compost can be obtained in two months crop.
- Short method used for preparation of compost under natural conditions gives more yield (15-20 kg. per 100 kg. compost).

