

Mushroom Cultivation - A Self Reliant Business

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Abstract

Mushrooms are fungi which are cherished for their flavour as well for their nutritional value. It is easy to cultivate, year round income generation and less input cost per unit area. It can help to reduce vulnerability to poverty and strengthens livelihoods through reliable source of income. It gives nearly 1 to 5 lakhs ₹ per annum from small 100 square feet area and total yield up to 1000 to 1500 kgs with just little care. They are low in salt and sugar and rich in natural source of Vitamin D. Mushroom farming is gaining popularity day by day among new entrepreneurs.

Keywords: favour, vulnerability, livelihoods and entrepreneurs.

Introduction

Currently millions of tonnes of agricultural waste are discarded burnt or dumped which create environmental pollution. These ways can be used alone or in combination to create nutritional mushroom growing substrate. Mushrooms are vegetables at full of nutrients and therefore can make a very valuable contribution to human nutrition especially where the predominantly vegetarian population suffers from acute malnutrition

Types of Mushrooms

Among all above, White Button mushroom has high demand & popular hence most farmers select this variety for commercially mushroom farming. Average price for white button mushroom is in between 50-100 ₹/kg. Ooty 1 and Ooty (BM) 2 are mostly cultivated button mushrooms.

Table 1. Suitable areas for growing different types of mushrooms in India

Types of Mushrooms Suitable area

White Button Mushroom (*Agaricus Bisporus*) North-West plains of India

Paddy Straw Mushroom (*Volvariella Volvavea*) Coastal states

Milky mushroom (*Calocybe Indica*) Tropical and Sub-tropical parts of India

Dhingri (Oyster) Mushroom (*Pleurotus spp.*) North Eastern hill states

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1. Mushroom Spawn production

Mushroom growing process start form Spawn preparation. Spawn is planting material for mushroom cultivation. It is a seed of mushroom which produced in lab conditions.

2. Preparation of compost

This is an outdoor procedure and takes around 28 days in its conclusion with a total of seven turnings

Table 2. Composition of compost

Ingredient	Weight
Wheat straw	kg 1000
Chicken manure	kg 600
Wheat bran	kg 60
Urea	kg 15
Gypsum	Kg 50

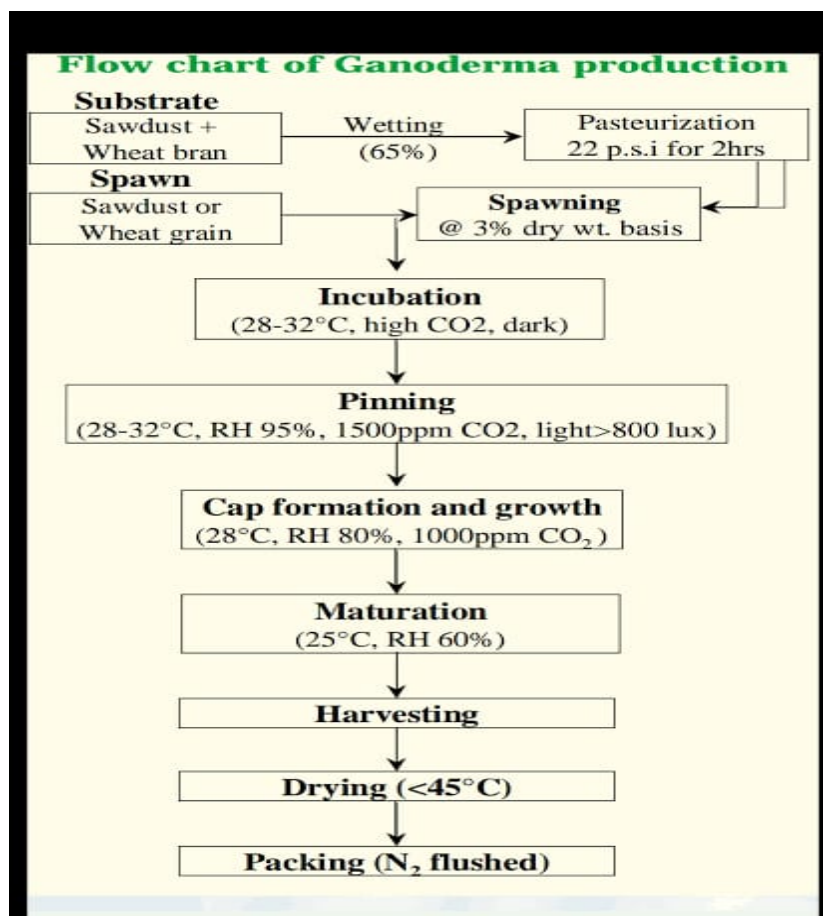


Fig 1. Flow chart of the mushroom cultivation line

The compost (synthetic or natural) used for mushroom growth usually comprises of wheat straws, horse manure, poultry manure, rice bran, gypsum etc. Utmost care is taken to protect the raw compost against rain or external moisture, as it might introduce undesirable microbes. The chopped wheat straws or rice bran are mixed with horse dung, sprinkled with water and are heaped in a pile to allow fermentation. The fermentation

process along with heat development breaks down the chemical compounds in small components.

Frequent turnings and watering is done at a specific interval so as to avoid the drying up of compost. Gypsum is sometimes added to the compost to reduce greasiness and allow more aeration. Within 15 to 20 days the compost gets all set to be used as bed, it is then spread onto wooden trays and sowed with spawns.

3. Spawning

Spawn refers to the mycelium carefully propagated on agars or grains. Spawning is a process of sowing or mixing spawns in compost. The spawns are thoroughly mixed with the compost, are covered with newspaper and is watered sufficiently to maintain the moisture. Throughout the cultivation period humidity is kept high to avoid loss of moisture. Gradually they grow into white cottony mycelium growth.

4. Casing soil

Casing is a kind of sterilized soil or dressing containing cow manure or soil, which is spread onto the spawn mixed compost. It is applied when the mycelium growth commences on the compost surface. After 15 to 20 days of its application mushroom head or pins start becoming visible on the surface. They are allowed to mature for a specific time period and are harvested before opening of the cap. Mushrooms with opened cap (looks like an umbrella after opening of cap) are undesirable and are considered of menial quality

5. Harvesting and Yield

Harvesting is done by plucking them from soil using hands or the heads are chopped off using knife. The harvested mushrooms are then subjected to primary processing. Mushroom Pinhead initiation starts after 10-12 days and mushroom crop harvested in 50-60 days. The first crop appears about 3 weeks after casing. About 10-14 kg fresh mushrooms per 1000 kg fresh compost can be obtained in 2 months crop.

Table 3. Nutritional composition

Nutritional value per 100 g	
Energy	(kJ (27 kcal 113
Water	g 92.45
Carbohydrates	g 4.1
Fat	g 0.1
Protein	g 2.5
(Riboflavin (Vit B ₂	(mg (42% 0.5
(Niacin (Vit B ₃	(mg (25% 3.8
Calcium	mg (2% 18
Phosphorous	(mg (17% 120
Sodium	(mg (0% 6
Vitamin D	µg 0.2
Sugar	g 1.98

Mushroom Productivity

In around 18–20 kg from 1000 kg compost.

Processing

Mushroom are very fragile and have a short shelf life, unless consumed fresh. At ambient temperature they lose their freshness within a day and deteriorates rapidly if not processed or refrigerated. Initial processing involves washing mushrooms to remove adhering soil or compost and blanching them for few minutes to inactivate the enzymes. In order to prevent discoloration, they are treated with brine, salt or citric acid prior to canning or packaging.

Conclusion

Mushroom is additionally known as “**white vegetables**” or “**deboned eater meats**” contain ample amounts of proteins, vitamins fibres and medicines. Mushrooms are one of the most popular and versatile gifts of nature. It can be mixed into any food preparations or can be processed to give a new product. Easy to cultivate, have quick growth and nil carbon emission and waste generation. The fungi are a good source of income generation for the growers and also provides additional benefits through its processing. Hence mushrooms holds a bright future in every aspect owing to its diverse properties.

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