

## **Button Mushroom Farming**

Cultivated mushrooms are edible fungi that grow on decaying organic matter, known as a substrate. Unlike vegetables they do not rely on sunlight to grow.

Mushrooms start as very small spores. The spores will grow in the substrate to produce a network of fine white filaments called mycelium (portion of the mushroom that grows underground). From the mycelium the mushroom fruit is produced.

## **Why Mushroom farming?**

There is a huge demand in the market i.e. 476 tons produced currently against 1200 tons in demand (Source: NAFIS)

Are healthy foods with high nutritional value: rich in proteins, fibre and vitamins

Requires limited space e.g. indoors

Not dependant on the general weather conditions

## **Before you start to grow mushrooms, you should consider the following:**

- 1) Potential markets and supply chains
- 2) Source(s) of high quality spawn (mushroom 'seeds')
- 3) Availability of substrate (material on which mushrooms grow)
- 4) Availability of supplements (additional nutrients to the substrate)
- 5) Production plan to ensure continuous production

## **Varieties**

The common mushroom varieties in Kenya include: Button, Oyster, Shitake and Ganoderma.

## **Spawn**

It is a planting material equivalent of farmers' seed for starting mushroom cultures. It is made from mycelia (plural of mycelium) of mushroom grown on a carrier such as grains and is produced in specialized laboratories under sterile conditions.

JKUAT, Juja Campus is producing high quality spawn. Contact them on 0722 728812 for more inquiries.

## **Substrate**

Substrate is an organic-based material on which mushrooms grow.

A good substrate should be: rich in nutrients have good aeration and a good water holding capacity.

Substrates commonly used in mushroom production include agricultural by-products such as cereal straws (wheat, barley, rice, maize), cotton waste, maize cobs, and coffee husks.

Cereal straws, particularly wheat straw, are usually the best because they are rich in nutrients that mushrooms require and they facilitate quick colonization (the formation of a white mass of mushroom mycelium) of the substrate.

## **Supplements**

These are materials added on the final mix of substrates to increase nitrogen content in order to improve the yields.

Commonly used supplements include urea, bran, cotton seed cake, sunflower seed cake, molasses, and broiler chicken manure.

## **Mushroom house**

Mushroom house should not be near dumping sites and livestock pens to reduce the risk of insect infestation and diseases.

It should preferably be under shade. The house can be made from locally available materials that can maintain cool temperatures and high humidity such as clay or bricks.

In a small-scale farmer scenario, a grass thatched mud walled house is the most ideal. The house should have air vents or small windows on the upper walls for ventilation and required light during fruiting.

The vents and door should have insect screens and be closed. If the temperature inside the house is high, water can be sprayed on the floor using a knapsack sprayer with fine nozzles and vents and door opened at night.

Wooden shelves for holding bags or wooden racks for hanging spawned substrate tubes should be constructed at the height of about 1.5 m from the ground and 1 m apart for ease of working in the growing house.

## **Procedure:**

- Get wheat or rice husks and ensure they are clean.
- Cut them into pieces and soak in water for 4-6 hours
- Remove to drain excess water.
- Mix the substrate with bran to provide nutrients for your mushroom.
- Pack the mixture in special clear bags meant for growing mushroom
- Tie the 'mouth' of the bag and leave a small hole where you will put your spawn (seed)
- Sterilize the bags using steam for 4 hours.
- Maintain proper hygiene as you plant the seed.
- Put the planted bags in a dark room for incubation.
- This takes 30 days and the whole paper turns white (colonization).
- During incubation maintain a temperature of 25-27 degrees Celsius
- After 30 days remove the bags from the incubation room and take it to the fruiting room

If you don't have enough space you can still use the incubation room provided you allow light to come in.

This is because during fruiting light is required. Here you maintain a low temperature of a maximum of 20 degrees Celsius.

After 7 days it will start fruiting and you harvest according to the demand of your market.



