



## Mushroom

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Mushroom is the large fruiting body of a fungus and another is a set of fungi that make them. It is naturally low in sodium, fat, cholesterol, and calories and have often been referred to as "functional foods".

Mushroom nutrition and culinary characteristics suggest it may be time to re evaluate food grouping and health benefits in context of three separate food kingdoms:

Botany

zoology

mycology

Mushroom is a powerful source of Anti-oxidant and contains many micronutrients. It contains natural antibiotic which inhibit the growth of the microorganism and fungus and thus to avoid chronic diseases. It has good sources of water and low in calories.

**Health benefit of Mushrooms include the following:-**

- **Lowers Cholesterol :-** Mushrooms themselves provide you with lean proteins since they have no cholesterol or fat and are very low carbohydrates. The fiber and certain enzymes in mushrooms also help lower cholesterol levels. Moreover, the high lean protein content found in them help burn cholesterol when they are digested.
- **Prevents Diabetes :-** Mushrooms are an ideal low energy diet for diabetes .They have no fats, no cholesterol, very low level of carbohydrates, high protein content and wealth of vitamin and minerals.They also contain a lot of water and fiber.they contain natural insulin and enzymes which help to breaking down the sugar of starch food.
- **Improve bone health:-** Mushrooms are the rich sources of calcium which is an essential nutrient in the formation and strength of bones.
- **Help in weight loss:-** Mushrooms offer to help in losing the weight due to their nutrient density fruits,vegetables have higher but mushrooms can be helped to reduce the weight and they have no side effect.

- Prevent breast cancer:- Mushrooms are very effective in preventing breast cancer due to presence of Beta Glucans and conjugated Linoleic Acid which both have anti carcinogenic effects.

### **Essential benefit of eating Mushroom :-**

- High in iron
- Low in calories
- Rich sources of vitamin B2
- Good for bladder
- Protect hairs , nails , and teeth
- improves the immunity power

### **There are three types of Mushroom:-**

- Oyster
- White button
- Shiitake

Oyster Mushrooms grow best in straw. Shiitakes grow best on hardwood sawdust. Button mushrooms grow best in composted manure. These different growing media reflect the different nutritional needs to each species can be grown readily enough in sawdust or straw. If you are growing mushrooms in straw or sawdust it will be necessary to sterilize these growing mediums before inoculating with the spawn. This is done to kill off any microorganism that could compete with the mycelia.

The sterilize the growing medium, place it in a microwave safe bowl and add enough water to make the straw or sawdust damp. place the bowl in the microwave and heat on high for two minutes or until the water boiled off. thus the kill off any microorganism leaving the growing medium safe to receive the mushroom mycelia. Heat the growing medium so that the mycellia will spread. The mycelia in your mushroom spawn need to spread into the growing medium thoroughly before producing mushrooms. A warm temperature encourages this growth. After choosing the growing medium suited for your mushroom species, place a few handfuls of it into a baking pan. A shallow pan with a large surface area will provide the most room for your mushrooms to grow.

Place the growing medium into the proper environment. After 3 weeks, you need to place the pan into an environment that is dark and cool. A basement usually works well for this ,but a cabinet or drawer in an unheated room will work in winter.

### **There are five stages to grow Mushroom:-**

- Mycelium running :-The spawn will give rise to white hyphae which produce enzymes to degrade complex substances like cellulose, lignin, and hemi cellulose into smaller fragments. The fragment will be consumed at a later stage of mycelial growth.
- Mycelial coat formation :- A thick white mycelial sheet will develop on the surface of the substrate. This will occur in two to four weeks after inoculation.
- Mycelial bump formation :-Bumps are clumps of mycelium, commonly formed on the surface

by most strains. These bumps can turn into primordia at a later stage, but most of them fall off.

- Pigmentation phase :- Some aeration should be provided when the bumps have formed. The mycelium will turn reddish brown. The plugs are removed entirely, the substrate may dry out too much.
- Coat hardening phase :- Remove the plastic when bags have partially turned brown. The outside of the substrate will gradually become hard. While inside should be softer and moist.

### **Pests and diseases :-**

- Green Moulds:- They are the most common contaminants at the moment of spawning. They will also grow if there are any cracks in the bags. The substrate should be kept dry in between the flushes. It is best to spray the green moulds after the harvest with a strong flush of water. It will be more difficult to obtain a good second flush.
- Mushroom flies :- Mushrooms flies are attracted by the odour of the mycelium. They may occur in batches of old bags. The flies as such do not harm the mushrooms but they lay eggs between the lamellae and on the mycelium larvae will hatch from the eggs and will spoil the crop.
- Mites :- They may crawl into the incubation bags and contaminate the substrate. However the plastic bags will generally form a good barrier against insect, which makes this method of substrate packing most suitable for countries with a high infection pressure.

Now we can discuss about the demand of mushrooms in India, Mushrooms were not properly accepted as healthy food option but now due to awareness of the various health benefits, mushrooms demand is increasing. Mushrooms are very good sources of protein for vegetarians and recommended by doctors for those suffering from BP/Cholesterol. There are countless varieties of mushrooms but most commonly available are -Oyster, white button. Cultivation is also easy as it requires less water and space. It is possible to earn good rate of return (40 to 45% margin). Currently mushrooms are selling in the price range of 90-250 per kg depending on the varieties of mushrooms. Popularity of mushrooms has grown with many tasty Indian recipes which have been developed like pizzas, chilly mushrooms, soups, etc

### **Conclusion:-**

Now we can conclude that, Mushroom is the chief source of protein for vegetarians. Almost all edible mushrooms are very rich sources of protein and other essential amino acids. It also has low fat and high carbohydrates. So all health-conscious people now prefer mushrooms as most nutritious vegetarian food. Mushrooms are easily available in the market, and we can also grow mushrooms at home by providing essential requirements.