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MUSHROOM: AT A GLANCE

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Abstract: As we know that mushroom is also known as 'Vegetable Meat'. It has high protein, vitamin and other mineral contents. This focuses the various varieties of mushroom also reveals the medicinal, nutritional and entrepreneurial aspects of the mushroom. This also discusses many of the recipes based on mushroom. This describes the cultivation practices of mushroom, etc.

Keywords: Mushroom, nutrition, recipes.

Introduction: Mushrooms are the fruiting bodies of macro fungi. They include edible/ medicinal and poisonous species. Edible mushrooms once called the 'food of the gods'. The Chinese termed mushrooms as "Elixir of life" (Anonymous). In the beginning these mushrooms were collected from their habitats, but with passage of time there were attempts to cultivate them. Mushroom cultivation has great scope in developed as well as developing nations because of cheap & easily available raw materials for its production.

Mushroom is a macro fungus with a distinctive fruiting body, which can either epigeous or hypogeous and large enough to with naked eye (Anonymous). Mushrooms are devoid of leaves and chlorophyll containing tissues. The organic materials on which mushrooms derived their nutrition are referred to as substrates. The word mushroom is most often applied to those fungi (Basidiomycetes, Agaricales) that have a stem (stipe), a cap (Pileus) and gills (lamellae sing. lamella) on the underside of the cap. Fig.-1 (Singh, S.K.).

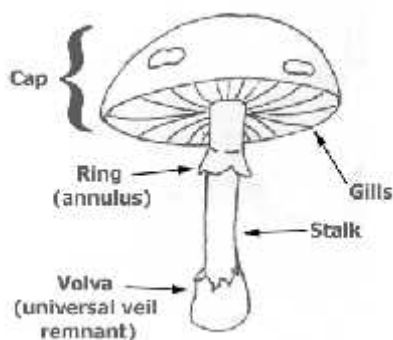


Fig. 1

Mushrooms have been found in fossilized wood that are estimated to be 300 million years old (Editorial, 1997, Anonymous) and almost certainly prehistoric man has used mushrooms collected in the wild as food but has no authentic record. The earliest record of living mushroom can be traced from Vedic period in Hindu religion existing species of mushrooms

are very huge which is about 14000 i.e. 14000 species are known to exist of there about 7000 species are considered to possess varying degree of edibility and almost 3000 species are considered as prime edible mushroom. Till now only 200 of them are experimentally grown, 100 of them are economically cultivated, about 60 are

commercially cultivated and about 10 have reached to industrial scale in many countries.

Some of Important Varieties of Mushroom and their Scientific Name

S.N.	Common name	Scientific name
1.	Button, European/Temperate	<i>Agaricus bisporus</i>
2.	Button, edulis/tropical Mushroom	<i>Agaricus bitorquis</i>
3.	Oyster Mushroom	<i>Pleurotus spp.</i>
4.	Paddy straw/Chinese/Tropic Mushroom	<i>Volvariella volvacea</i>
5.	Black ear Mushroom	<i>Auricularia Polytricha</i>
6.	White Milky Mushroom	<i>Calocybe indica</i>
7.	Brown cap/Giant Mushroom	<i>Stropharia rugoso annulata</i>
8.	The Prince; called "Mazakoon" in Kerala	<i>Psalliota angustus fries</i>
9.	Field Mushroom or Meadow Mushroom	<i>Agaricus compastris</i>
10	Almond Mushroom	<i>Agaricus miromangathus</i>

Guidelines in Order to Avoid Mushroom Poisoning

- Mixing of more than one variety should be avoided.
- Till the time one is not sure about the variety fully the particular Mushroom should not be used.
- External appearance is not sufficient to judge any mushroom variety because the most beautiful mushroom (*Amanita muscaria*) is highly poisonous.
- Excessive nature, pest infected, rotten & wild mushroom should not be used.
- While harvesting mushroom, if milk like fluid comes out then its use should be avoided fully.
- It is not necessary that if mushroom is not poisonous for animals like cat, Dog etc than it will be non-poisonous even for human being. It may be poisonous. So if any doubt persists then its use should be avoided completely.
- It is more important that poisonous mushroom should not be used.

Nutritional Value of Mushroom: Mushroom was introduced in the kitchen of aristocrats' primarily for their taste and flavor. But increasing knowledge opened their various qualities including high nutritive value, value added products, medicinal properties etc.

Mushroom is considered a delicacy by various sections of people in the world. Nutritional status was realized long ago by various researchers. Evolution of nutritive quality of mushroom was initiated in 1898 by Mendel and since then various literatures have accumulated on it which have been summarized [1]. Nutritive quality of Mushroom not only varies from species to species but also from author to author. The reason behind this variation is due to technological variation due to variation in age of treating body and the substrate on which mushroom was grown.

It contains about 90 % of moisture which is comparable to that found in most vegetables and variation from species to species is between 88 % to 92 %. The dry matter contains protein, carbohydrate, fiber fat and ash. Mushroom on dry weight basis contains about 50 % carbohydrate. It contains very little amount of fat which is 8 % on dry weight basis. Mushroom constitutes a low calorie food which is ideal for diabetic as well as heart patients.

It has got importance because of the presence of good quantity of protein, all most all vitamins (Except Vitamin. A) and minerals. Protein quality is of good quality as one can easily digest mushroom protein and especially very essential for those who only takes vegetarian diet. Its position is above vegetable protein and below animal protein. Mushroom contains all most all amino-acids and specially those which are not found in cereals and pulses particularly lysine, hence helps in overcoming amino acid deficiency.

Mushroom contains good source of all vitamins like B, C, D, K only Vitamin. A is not found and it is reported to be an excellent source of Vitamin. B₂ & Vitamin. B₅ [1]. These vitamins do not get lost in cooking during and freezing. Mushroom contains all important minerals. The ash analyses of mushroom have revealed that among the minerals constituents, phosphorus, sodium and potassium are predominate while low quantity of calcium and lowest amount of iron are also present. The iron content has been reported to vary from 70 to 1530 mg/kg of dry matter and that of manganese from 9 to 100 mg/kg of dry matter [2].

Medicinal Importance of Mushrooms: Mushrooms have achieved a tremendous advancement since last few decades. Scientific and medical studies claim that medicinal mushrooms have long been used for a wide range of diseases [1]. The main area including anti-cancer anti-cholesterol, blood pressure lowering

anti-fibrotic, anti-inflammatory, liver protective, anti-diabetic and anti-microbial ^[1].

In India, Ganoderma Lucidium is used in asthma by the Baiga tribe of central India. Agaricus species is used in goiter and Lycoperdon pusillum is used for controlling bleeding & wound healing. In Chinese folklore, the fruit body of Ganoderma lucidium has been used in the cure at the diseases like hepatopathy, chronic hepatitis, nephritis, hypertension, arthritis, insomnia, bronchitis, asthma, gastric ulcer, diabetes and anorexia ^[1]. Though variety of mushroom have proved their importance in field of medicines and they are beneficial to health cures various diseases.

Mushroom Cultivation: Mushroom cultivation in India has a tremendous change during the last few decades. This change has been seen with respect to the strains of mushroom geographical regions, growing period, amount of cultivation and technology of mushroom cultivation. This

Environmental Condition Necessary for Growing four Common Varieties of Mushrooms

S.N.	Varieties	Season	Temperature	Humidity	Time required from sowing to harvesting
1.	Oyster Mushroom	Throughout the year	25°C - 28°C	80-85 %	3 weeks
2.	Paddy straw Mushroom	May to September	28°C - 32°C	85-90 %	2 weeks
3.	Milky Mushroom	June to August	30°C - 35°C	85-90 %	5 weeks
4.	Button Mushroom	Oct to Feb	15°C - 20°C	80-55 %	4 weeks

Mushroom Recipes: Mushrooms are best consumed as fresh. However it is not possible all the time. It has poor keeping quality as it has high respiration hence proper attention has to be paid. It is wrapped in special type of PVC film and transporting is done under refrigerated condition at 15 °C and can be kept for about a week ^[4]. It can be blanched also. Vacuum packing and use of nitrogen gas etc are also some of the techniques through which shelf life can be enhanced. Recently gamma radiation also offers a method of preservation. A number of tasty dishes can be prepared with typical mushroom flavor. It has suitable flavor & attractive appearance. Before cooking mushroom it should be cut in pieces thoroughly washed and water should be drained completely ^[4].

The Various Mushroom Recipes are

1. Mushroom sauce
2. Mushroom salad
3. Mushroom Pickles
4. Creamed Mushroom
5. Mushroom ketchup
6. Stuffed capsicum Mushroom
7. Mushroom flavored Rice
8. Mushroom Kheer
9. Mushroom Biscuit
10. Mushroom Samosa

has been possible because of the Research and development efforts made in country by various organizations.

Mushroom viz. oyster mushroom, paddy straw mushroom and milky white mushroom great potential in India because of easy technology, sub-tropical to tropical climate cheap and easily availability at substrate and skills and investments required for its cultivation is within the reach of common people.

In addition to the above written varieties, white button mushroom has also gained popularity in our country. At present Button mushroom contributes about 80 to 85 % of total mushroom production in country followed by oyster & paddy straw mushroom, oyster mushroom are becoming more popular because of simple technology and cheap materials' for its cultivation for successful cultivation suitable climate and proper mushroom but is needed specially for button must.

11. Mushroom Sandwich
12. Mushroom Paneer
13. Malai Mushroom Curry

Conclusion: In a nutshell we can say that overall mushroom is a unique gift of nature; it is a very nutritious natural product containing proteins, vitamins and many other essential elements. It has unique medicinal qualities. If we talk about its management it is easy to cultivate. One can generate very good income, if he does this properly.

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