



## Indian Mushroom and its Nutrients!

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### Abstract

India's mushroom market is expanding rapidly and has a lot of potential due to its growing interest in vegetarian and vegan diets, the need for organic products, and the growing knowledge of the health benefits of mushrooms. Among the major varieties of mushrooms grown in India, the white button mushroom (*Agaricus bisporus*) is one of the most commonly grown and used commercial varieties and is widely cultivated in India. Oyster mushroom (*Pleurotus* spp.) is a common variety of mushrooms grown in northern India, offering a range of nutritional benefits that support general health, immunity, heart health, bone health, weight management and disease prevention due to their rich nutritional profile and bioactive compounds. India has the potential to become a key player in the global mushroom industry through its diversified climate, its considerable domestic market and increased public awareness. It can provide a wide range of edible and medical mushrooms to meet the growing demand around the world.

**Keywords:** India; Mushroom Market; Vegetarian; Vegan Diets; Organic Products; Health Benefits; White Button Mushroom; *Agaricus bisporus*; Oyster Mushroom; Nutritional Benefits; Immunity; Heart Health; Bone Health; Weight Management; Disease Prevention; Global Mushroom Industry; Climate; Domestic Market; Public Awareness; Edible Mushrooms; Medical Mushrooms; Growing Demand

### Introduction

The mushroom market in India is expanding rapidly and has a lot of potential. Several sources predict that between 2023 and 2028, the market would grow at a compound annual growth rate (CAGR) of 7.6%. Because they are a wonderful source of vitamin D, potassium, selenium, and riboflavin, mushrooms are becoming more and more popular. The usage of mushrooms in supplements for immune and digestive health, as well as the growing trend of veganism, are the factors propelling this expansion. Additionally, the augmenting demand for processed mushroom variants, investments in smart automation technologies for production, and the use of mushrooms in the pharmaceutical industry are contributing to the market's positive outlook [1-3].

Data on India's mushroom exports point to a bright future for the sector. Between 2023 and 2028, the nation is predicted to grow at a 7.6% CAGR, which could result in higher exports. In India, button mushrooms are especially well-liked due to their nutritional value and medicinal properties. India's mushroom market has a

lot of potential because of things like growing interest in vegetarian and vegan diets, the need for organic goods, and growing knowledge of the health advantages of mushrooms. India is the second-largest producer of mushrooms in the world, although its share of exports is still relatively small.

However, there has been a significant increase in fresh mushroom exports, with India exporting 7,768 metric tons of fresh and processed mushrooms in 2022-23 [2].

### The major types of mushrooms grown in India include:

- **White Button Mushroom (*Agaricus bisporus*):** This is one of the most often grown and utilised commercial varieties of mushrooms, and it is widely cultivated in India. It is frequently found in supermarkets and grocery stores, and it has small white or cream-colored caps with a moderate flavour. A versatile element in many different cuisines, including pizza, is white button mushrooms [4,6].

- **Oyster Mushroom (*Pleurotus spp.*):** The oyster-like flavour of oyster mushrooms is well-known and holds great significance in India. They have a fan-shaped structure with a velvety texture, and they are available in a variety of colours, including grey, white, brown, pink, and yellow. Dhingri, also known as *Pleurotus ostreatus*, is a common variety of oyster mushroom grown in India [6].
- **Milky Mushroom (*Calocybe indica*):** Milky mushrooms are also grown in India and are part of the commercial cultivation of mushrooms in the country. They are known for their spongy texture and umbrella-shaped structure emerging from decaying organic matter [4].
- **Paddy Straw Mushroom (*Volvariella volvacea*):** This variety is cultivated commercially in India and is one of the major mushroom species grown in the country. Paddy straw mushrooms have a soft flavour and aroma, making them popular for culinary use [4].
- **Shiitake Mushroom (*Lentinula edodes*):** Although not as dominant in commercial markets, shiitake mushrooms are cultivated in India. They have a smoky flavour and are known for their medicinal properties. There is a growing focus on cultivating shiitake mushrooms in the northern states of India [4,5].

These types of mushrooms are among the major varieties grown in India, each offering unique flavours, textures, and nutritional benefits.

Specific nutrients found in the mushrooms and nutritional benefits of the mushrooms grown in India.

**The mushrooms grown in India are rich in various nutrients, including:**

- **Proteins:** Mushrooms are a good source of protein, providing essential amino acids necessary for various bodily functions. They are valuable for vegetarian diets due to their protein content [7-9].
- **Fiber:** Mushrooms contain dietary Fiber that aids in digestion and may help manage health conditions like diabetes. Fiber is essential for maintaining gut health and overall well-being [7-9].
- **Vitamins:** Mushrooms are rich in vitamins such as riboflavin (vitamin B2), niacin, folates, vitamin D, vitamin C, and B vitamins like thiamine and vitamin E. These vitamins play crucial roles in supporting overall health and well-being [7-9].

- **Minerals:** Mushrooms contain minerals like potassium, phosphorus, magnesium, calcium, copper, iron, zinc, selenium, and other essential minerals. These minerals are important for various bodily functions and overall health [7-9].
- **Carbohydrates:** Mushrooms contain carbohydrates, including chitin, glycogen, trehalose, and mannitol. They also provide Fiber,  $\beta$ -glucans, hemicelluloses, and pectic substances, contributing to a balanced nutrient profile [7-9].
- **Other Nutrients:** Mushrooms are also a good source of other nutrients like selenium, which is important for its antioxidant properties, and potassium, which is essential for heart health and muscle function. They also contain healthy sugars like glucose, mannitol, and trehalose [7-9].

**Nutritional benefits of the mushrooms grown in India include:**

- **Protein:** Mushrooms are rich in protein, providing essential amino acids necessary for various bodily functions. They are a valuable protein source, especially for vegetarian diets [9,11].
- **Fiber:** Mushrooms contain dietary fiber that aids in digestion and may help manage health conditions like diabetes. Fiber is essential for maintaining gut health and overall well-being [9,11].
- **Vitamins and Minerals:** Mushrooms are a good source of various vitamins and minerals such as potassium, calcium, iron, magnesium, phosphorus, selenium, vitamin C, and B vitamins like riboflavin, folate, thiamine, and niacin. These nutrients play crucial roles in supporting overall health and well-being [9,11].
- **Antioxidants:** Mushrooms are rich in antioxidants like selenium, which can help protect the body from oxidative stress and reduce the risk of certain diseases. Antioxidants in mushrooms contribute to heart health and may help prevent cancer [9,11].
- **Immunity Boost:** Certain compounds found in mushrooms, such as alpha-glucans and beta-glucans, can boost immunity and protect the body from bacterial and viral infections. Including mushrooms in the diet can enhance immune function [10].
- **Heart Health:** The fiber, potassium, and vitamin C content in mushrooms contribute to cardiovascular health by helping regulate blood pressure and cholesterol levels. Mushrooms contain lovastatin, which can help lower cholesterol levels [10].

- **Bone Health:** Mushrooms provide vitamin D and calcium, essential for maintaining strong bones. These nutrients support bone health and help prevent conditions like osteoporosis [10].
  - **Weight Management:** Mushrooms can regulate metabolism due to their low-calorie content and high water and fiber content. Including mushrooms in the diet can aid in weight management efforts [10].
  - **Cancer Prevention:** The presence of vitamin C and antioxidants in mushrooms may reduce the risk of certain types of cancer such as lung cancer, breast cancer, and prostate cancer. These compounds have anti-tumor properties that contribute to cancer prevention [10].
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### Conclusion

In conclusion, the mushroom market in India is expanding rapidly and has a lot of potential, with a predicted compound annual growth rate of 7.6% between 2023 and 2028. mushrooms grown in India offer a range of nutritional benefits that support overall health, immunity, heart health, bone health, weight management, and disease prevention due to their rich nutrient profile and bio-active compounds. India's mushroom business is doing well, with an emphasis on raising output, raising standards of quality, and looking into new markets both domestically and internationally. India has the potential to become a key participant in the global mushroom industry by using its diversified climate, sizable domestic market, and rising public awareness. It could provide a broad range of edible and medicinal mushrooms to satisfy the expanding demand around the globe.

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