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## Value added products and many health benefit of mushroom products

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### Abstract

This paper summarised the cultivation practices of mushroom. The processing equipment method of preservative, value added based product and its nutritional properties the review also highlight the various scientific feats achieved in term of patents and reset publication promoting mushroom as a wholesome food and health benefits.

A mushroom is the reproductive structure produced by some fungi. It is somewhat like the fruit of a plant, except that the "seeds" it produces are in fact millions of microscopic spores that form in the gills or pores underneath the mushroom's cap.

You can also prepare various value added products such as mushrooms pickle, jam, sauce, candy, preserve, chips etc. from fresh mushrooms whereas from the dried mushroom powder value added products like instant soup mix, bakery products, papa, nuggets etc.

Mushrooms are botanically classified as fungi and considered a vegetable for nutrition. They provide a wide range of nutrients, good news for those who love to enjoy mushrooms on pizza and in favorite dishes.

Mushroom cultivation can help reduce vulnerability to poverty and strengthens livelihoods through the generation of a fast yielding and nutritious source of food and a reliable source of income.

**Keywords:** Mushroom, value added product, health benefits, bakery products etc.

### Introduction

The benefits of value-added foods include providing better nutrition to children and mothers; greater income for producers; access to new markets; and new processes to improve packaging and storage to reduce waste and ensure greater food safety. Value added reflects the value generated by producing goods and services, and is measured as the value of output minus the value of intermediate consumption. Value added also represents the income available for the contributions of labour and capital to the production process. Value added products are raw agricultural products that have been modified or enhanced to have a higher market value and/or a longer shelf life. Some examples include fruits made into pies or jams, meats made into jerky, and tomatoes and peppers made into salsa cookies etc products.

Mushrooms are nutritious, medicinal and functional food. It is considered as a health food as it contains low calories, high protein, dietary fiber, vitamins, and minerals (Barros *et al.*, 2008) [7].

According to Sadler (2003) [5], mushrooms are a good source of insoluble fiber in the form of chitin (polymer of N-acetyl-glucosamine) and non-starch polysaccharides like  $\beta$ -glucans. Mainly mushrooms are low in fat and a good source of unsaturated fatty acids, 75% (w/w) of the total fatty acids as per reports of Andre *et al.* (2010) [6].

It is popularly known as "ogiri agbe" among this tribe and "Ero" by the Igbos and exploration is often done in the wild. Through expertise, rural dwellers are able to distinguish the edible from the poisonous ones. Over two thousand species of mushrooms exist, however only less than 3% are known to be edible while the rest are poisonous but have appearances similar to and are often mistaken for the edible ones. So far about twenty-five edible mushroom species of good repute whose knowledge were handed down generational lines via oral communication have been identified in Nigeria. The beginning of wild mushrooms hunting had been traced to the ancient times when fructifications of higher fungi were source of food because of they contain nutritionally important chemical substances (Cooke, 1977; Mattila *et al.*, 2001) [12, 9].

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In the early days of civilization, mushrooms were consumed mainly for their palatability and unique flavours (Rai, 1994, 1997)<sup>[10, 11]</sup>. The nutritional value of mushroom is affected by numerous factors such as species, stage of development, substrate type, mushroom part considered for analysis and environmental conditions (Diez and Alvarez, 2001)<sup>[8]</sup>.

It's the need of the hour not only to reduce the losses, but also to enhance the income by value-addition and boost the mushroom consumption (Mehta *et al.*, 2011)<sup>[3]</sup>. In India the per capita consumption of mushroom is a dismal 30-40g as compared to 2-3 kg in American and European countries. India is a big market and increase of per capita consumption

even up to 100 g will help growers to market over 1.00 lakh ton mushrooms within the country (Manjit Singh and Shwet Kamal 2012)<sup>[1]</sup>.

Mushroom is sliced and dried, it can be made into powders to be used as additive to increase content of dietary fibers in various foods and as a partial substitute for wheat flour in the bakery products or the dried slices are used directly in soups biscuits, nuggets and snacks preparation Other mushroom-based food products like bread, cake, roasted mushrooms in oil, mushroom pate, etc. have been prepared to add value to mushrooms and increase the consumption of mushrooms by children and elderly people (Ravi and Siddiq, 2011)<sup>[4]</sup>.

**Table 1:** Some popular Mushroom Varieties

Variety	Flavour	Uses
White Button	Fairly mild taste and pairs well with almost anything flavor intensifies the longer they are cooked.	Saute or cook in any way or even enjoy raw in a salad
Cremini	Deeper, earthier flavor than white button.	Saute, broil, microwave, or cook in almost any way.
Portabella	Deep, meat-like texture and flavour	Grill, broil, or roast serve as appetizers, entrees or side dishes
Enoki	Mild taste and crunchy texture	Trim roots at base before using. Before serving them, separate the stems
Oyster	Mild, delicate flavor	Sauting with butter and onion brings out their best flavor.
Maitake	Distinctive aroma and rich, woody taste.	Lightly saute in butter or oil
Shiitake	Rich and woody when cooked	These taste best when cooked.

According to (Haider Ali Malik, 2019).

Mushrooms are widely known for their great taste and amazing health benefits. Packed with a ton of essential vitamins and minerals, they make for an excellent addition to your diet, adding flavor to many different recipes. mushrooms are one of the most widely used mushroom varieties, popular in kitchens around the world. Many don't realize that mushrooms, including mushrooms, are actually a kind of fungus. They're native to North America and Europe and are known for their delicate flavor and meaty texture.

### Health Benefits

Mushrooms are a low-calorie food that packs a nutritional punch. Loaded with many health-boosting vitamins, minerals, and antioxidants, they've long been recognized as an important part of any diet. For instance, mushrooms raised with exposure to ultraviolet light are a good source of vitamin D, an important component in bone and immune health. mushrooms are a particularly excellent source of zinc, an essential trace element. Zinc is a vital nutrient for the immune system and is also needed for ensuring optimal growth in infants and children. Moreover, researchers have found a number of other excellent reasons for incorporating mushrooms into your diet, such as:

### Lower blood Pressure

Mushrooms are rich sources of potassium, a nutrient known for reducing the negative impact that sodium can have on your body. Potassium also lessens the tension in blood vessels, potentially helping to lower blood pressure.

### Boost Immune System

The anti-inflammatory effect of mushrooms has been shown to greatly improve the efficiency of the immune system. Research has found that mushrooms help stimulate microphages in the immune system, enhancing its ability to defeat foreign bodies and making you less susceptible to serious illnesses.

### Weight loss

Long and short-term studies alike have found that mushrooms, in combination with exercise and other lifestyle changes, can have an important impact on weight loss. For example, after being asked to substitute 20 percent of their beef consumption with mushrooms, research participants showed improvements in their BMI and belly circumference. The antioxidants in mushrooms are also thought to reduce the risk of hypertension and other metabolic disorders. Nutrition Mushrooms are a rich, low calorie source of fiber, protein, and antioxidant. They may also mitigate the risk of developing serious health conditions, such as Alzheimer's, heart disease, cancer, and diabetes.

They're also great sources of:

- Selenium
- Copper
- Thiamin
- Magnesium
- Phosphorous

### Conclusion

Mushroom is rich source of protein, vitamin & minerals. So value added products could be made from mushroom powder like pickle, Murabba, Jam, jelly, Badiya, Candy, papad, Cookies, Laddu etc, which can be used for nutritional enhancement of daily household diet both at rural & urban levels. So this study will help and enable people to know about the use and benefits of mushroom value added products.

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