

Nutritional and medicinal aspects of edible mushrooms

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ABSTRACT

The mushroom is a fleshy, space-bearing organ of non-green edible fungi. Its fleshy nature of mushroom is responsible for its main attraction to human being as a source of food. Fresh mushroom contain virtually no fat and cholesterol and hence they can be consumed by patients suffering from atherosclerosis. Mushroom and their products are engaged as delicacy and its consumption is rapidly increased as they have remarkably taste, flavour and nutritive value. Its products can serves to improve the nutritional status and helping in alleviating protein deficiency in children. Mushroom can be preserved by many methods viz., drying/dehydration, canning, blanching, osmotic dehydration, irradiation, freezing, pickling, chemical treatment, product development for long term storage. In forthcoming period, development and introduction of new products with wider acceptability and comparatively at low price will be further increase the demand and consumption of value added mushroom products due their nutritional and medicinal food values.

Key Words : Diet, Medicinal, Nutritional, Preservation and Value added products.

INTRODUCTION

Mushrooms have achieved significant importance due to their nutritive and medicinal values and as an income generating industry in the world. The mushroom is a fleshy, space-bearing organ of non-green edible fungi. Its fleshy nature of mushroom is responsible for its main attraction to human being as a source of food. Like other fruit and vegetables, mushrooms are soft textured and highly perishable in nature. Mushroom are potential sources of nutrients. They can convert nutritionally valueless substances into high fat and protein food. Mushroom proteins are comparable to muscle protein in nutritive value. Being a good source of vitamins and proteins it is considered be a distinct food. The digestibility of protein in these is 72-83%. Mushrooms are edible fungi; assume considerable importance in human diet as they are good source of non starchy carbohydrate, dietary fibre, minerals and vitamins-B and essential amino acids.

Mushrooms are popular their delicacy and flavour rather than food value. However, it is now a well-established fact that they are excellent sources of vitamins and minerals (Vijaya Khader, 1988). The vitamins in mushroom are well retained during cooking, canning, and dehydration. The White button mushrooms (*Agaricus bisporus*), Shiitake mushroom (*Lentinus edodes*), Pleurotus species (*Pleurotus ostreatus*, *P. flabellatus*, *P. sajor caju* etc.), Paddy straw mushrooms (*Volvariella volvacea*), winter mushrooms (*Flammulina velutipes*), Jew's ear mushrooms (*Auricularia polytricha*) are commercially cultivated species of mushroom (Table 1). In India, mainly three species viz., white button, oyster or dhingari and paddy straw mushrooms are commercially cultivated at large scale. The production of mushrooms is increasing at a fast rate from 4000 tonnes in 1985-86 to 30,000 tonnes in 1996-97 (Rama and Jacob John, 2000). At present, it estimated to be 50,000 tonnes/annum (Tewari and Pandey, 2002).

Mushrooms are highly perishable commodities and they start deteriorating immediately after their harvest. They developed of brown discoloration on the surface of mushroom caps due to enzymatic action of poly phenol oxidase and they quickly become soft at high temperature. Mushroom have poor shelf-life and dehydration appears to be a promising cost effective method of preservation for Indian conditions as dehydrated mushroom are easy to transport as compared to canned, pickled and frozen product (Chandra and Samsheer, 2002). Development of appropriate storage and post harvest technology in order to extent their marketability and availability to consumers in fresh as well as processed form is of significance. Mushroom with regard to their good medico-nutritional and high digestibility values are gaining importance in today's human diet. Even in this century of vegetarian consciousness and healthy eating, the mushroom is, in fact, providing to be an excellent meat substitute (Singh *et al.*, 1995). Vijaya khader (2001) reported that fresh mushroom contain about moisture (85-95%), protein (3.0%), carbohydrate (4.0%), fat (0.3-0.4%) and mineral/vitamins (1.0%). Development of appropriate storage and preservation technology in order to extent their marketability and availability to consumption in fresh as well processed form is of great significance.

NUTRITIONAL ASPECTS

Mushrooms are consumed for their delicacies flavour, palatability and nutritional value. Palatability can be determined by their colour, texture, flavour and taste. Hence, it can be an answer for the protein malnutrition prevalent in most of the developing and under developed countries of the world. Approximate nutritional analysis of edible mushrooms (Table 2) and comparison with other food items (Table 3) are discussed below.

Table 1: Various species of edible Mushrooms grown in India

S.No	Common variety of edible mushrooms	Scientific name
1.	Button, European/Temperate	<i>Agaricus bisporus</i>
2.	Button/Edulis/Hot weather mushroom	<i>A. bitorquius</i>
3.	Oyster mushroom	<i>Pleurotus species</i>
4.	Paddy straw / Chinese / Tropical mushroom	<i>Volvariella volvacea</i> , <i>V. diplosia</i> .
5.	Black ear mushroom	<i>Auricularia polytricha</i>
6.	White milky mushroom	<i>Colocybe indica</i>
7.	Brown cap/Giant mushroom	<i>Stropharia rugoso annulata</i>
8.	Shiitake mushroom	<i>Lentinus edodes</i>

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