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Ready to Fruit (RTF) Bags- A Novel Concept to Enhance Household Nutrition through Mushrooms

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There are about 1500 varieties of mushrooms which are edible of which about 600 varieties are exclusive medicinal valued. Among the culinary medicinal mushrooms, Oyster mushrooms is the easiest to grow and highly suitable for Indian climate. Mushroom Research Lab at IIHR has initiated the concept of RTF bags for oyster mushrooms which ensures that oyster mushroom can be easily grown at home.

Introduction

Mushrooms are storehouse of excellent nutritional and medicinal components to enhance nutrition and health. Daily intake of mushrooms is a very common thing in south East Asia. However, it has yet to find place in the culinary menu of Indian families in the west. Among the many reasons, the lack of awareness, non availability in common stores and high cost are prominent reasons for non adoption as daily intake. There are about 1500 varieties of mushrooms which are edible of which about 600 varieties are exclusive medicinal valued. Among the culinary medicinal mushrooms, Oyster mushrooms is the easiest to grow and highly suitable for Indian climate.

Nutritional and Medicinal Potential of Oyster Mushroom

Nutritional potential: Oyster mushrooms are one of the most hygienic and chemical free vegetables that are full of nutrients and therefore can make a very valuable contribution to human nutrition especially in a country like India where the predominantly vegetarian population suffers from acute malnutrition. They are hygienic because the paddy straw or any other agricultural waste which is used to grow them is steam sterilized at 121°C for 15-30 minutes. No chemical is used at all during their growth phases; hence, they are totally chemical free. Oyster mushrooms are a rich source of proteins (3-4% on fresh weight basis and 25-35% on dry weight basis). It can therefore, be an important protein source among the vegetarians. As a dietary source of proteins mushrooms are superior to most common fruits and vegetables with the exception of beans and peas. Mushrooms can be eaten fresh in salads or cooked unlike soya or yeast which has to be processed before they are acceptable on the table. Mushrooms contain all the essential amino acids. Lysine is the most important amino acid in mushrooms which is low in cereals. Mushrooms rank very high in vitamin content especially B vitamins as compared to most of the common vegetables eaten in the Indian diet. The riboflavin, thiamin, Vit. B12, and niacin content of mushrooms is very high. Mushrooms are the only vegetarian source of vitamin D, which is deficient in majority of the Indian population. Sun dried oyster mushrooms become a very good source of vitamin D and can take care of the most of the daily requirement of Vitamin D in humans. Oyster mushrooms are a very good

source of minerals like iron, Zinc, potassium, phosphorus and folic acid. Mushrooms contain high amounts of antioxidants like ergothioneine.

Medicinal potential: Mushrooms have been valued for millennia for their medicinal properties. Historically hot water soluble fractions (decoctions and essences) from medicinal mushrooms i.e mostly polysaccharides were used as medicine in the Far East, where knowledge and practice of mushroom use was primarily originated. Oyster mushrooms are low fat, zero cholesterol, high fiber and low energy food hence, excellent for diabetics. Oyster mushrooms are also known to reduce blood lipid levels. Due to very low sodium, they are also regarded as excellent diet for reducing blood pressure. Due to their high iron and folate content, oyster mushrooms are often called as blood builders. The mushroom if consumed in dry powder form can largely mitigate iron malnutrition. The zinc content too is high which can manage the zinc deficiency of the Indian population. Oyster mushrooms are also known to possess anti-tumor and immunomodulating properties.

Method: From Bag to Table in 5 Days

Mushroom Research lab at IIHR has initiated the concept of Ready to Fruit (RTF) bags for oyster mushrooms. This ensures that oyster mushroom can be easily grown at home in some humid corner of the backyard. The concept involves providing the seeded and developed (grown) straw bags to the consumer. A slit or hole is to be made by the consumer, light spray of watering to be done and the mushrooms sprout within 5-7 days. A maximum of 10 bags are given to each housewife on prior order basis (25 days advance order). The bags have to be collected from IIHR on any working day on cash payment basis. At present, Elm oyster mushroom and pink oyster mushrooms are being made available. These bags are to be purchased to harvest excellent healthy mushrooms at home. The harvested mushrooms can be used fresh or sun dried which makes them enriched with vitamin D. The dried mushrooms can be used as such by presoaking in warm water for 15-20 minutes or can be easily powdered in house blender (mixie) at home. The powder and the dry mushrooms can be stored even upto one year (refrigerator) in air tight containers. The powder can be used to enhance the nutrition and flavor of any everyday meal like rasam, chutney poodi, plain rice etc. Thus, an excellent hygienic, chemical free and culinary medicinal mushroom can be a part of your kitchen or terrace garden. All you require is a bottle sprayer and a few minutes for spraying water. IIHR can also help in establishing production units of RTF bag by the Govt. or private agencies so as to make oyster mushrooms a part of our daily menu. One can also generate income by sale of RTF bags through retail stores, vegetable shops, nurseries, etc.



Women carrying RTF bags



Growing mushroom at home



Sun drying mushrooms for long term storage

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