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Comparative study on varietal variation on nutritional quality of mushroom

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Abstract

Some national and international levels use variety viz., Beech (*Hypsizygus tessellatus*, Crimini (*plural criminis*), Enoki (*Flammulina velutipes*), Maitake (*Grifola frondosa*), Oyster (*Pleurotus ostreatus*), Portabella (*Agaricus bisporus*), Shiitake (*Lentinula edodes*), Chicken Mushroom (*Lyophyllum decastes*) of mushroom were taken for comparative study on varietal variation of Nutritional quality (Carbohydrate, fat, protein, vitamin, cholesterol, sodium and Energy). The highest carbohydrate (34mg) and fat (2.14 mg) was recorded in Chicken mushroom compare to phoenix mushroom and rest have poor or nil quantity. In case of vitamin the maximum quantity was found in Maitaka followed by Oyster, Shitika and phoenix respectively. Energy level maximum recorded in Shitika compared to others.

Keywords: comparative; varietal; variation; nutritional; quality; mushrooms

Introduction

Mushrooms are classified as vegetables in the food world and it have been cultivated since ancient times for their nutritional value and flavour especially in the far eastern countries. Although they are not vegetables, but it's provide several important nutrients like Riboflavin, Niacin, Pantothenic acid, Selenium, Ergothioneine, Copper, Potassium, Complex carbohydrates, including fiber and may contain beta-glucans also is to eat a colourful variety of fruits and vegetables. The protein found in mushrooms is less than in animals but much more than in most plants. They have low fat content, high fibre and all essential amino acids and with the exception of iron, contain all important minerals too (Sadler, 2003) [9]. On exposure to UV-light, mushrooms also produce large amounts of vitamin D, which is normally difficult to obtain from a regular diet intake. Mushroom is not only packed with nutrients like vitamin D but also has properties to ward off cancer, HIV-1 AIDS and numerous other diseases (Beelman *et al.*, 2003) [1]. It is an economical crop to cultivate, requiring low resources and area, can be grown throughout the world and all over the year from low-cost starting materials. There is tremendous potential and appeal for growing a highly nutritious food with excellent taste from substrates that are plentiful and not very expensive (Beetz and Kustudia, 2004) [2]. Also, it is very environmental friendly, capable of converting the lignocellulosic waste materials into food, feed and fertilizers (Hadar *et al.*, 1992; Jaradat, 2010) [5, 6]. However, mushroom consumption and production is relatively low in comparison to other crops and investment in the mushroom industry is not very large (Chang, 2008). Of all protected crops grown in the world, the mushrooms have the largest gross value in terms of area grown but the total gross value of all protected crops is only a third of the value of the wheat crop. Study of mushroom science is a relatively new approach and the mushroom industry is still small compared to other crops and therefore investment is limited. Although there are well over 300 genera long celebrated as a super food source of powerful nutrients, fresh mushrooms are a healthy addition to your plate. Mushrooms provide many of the same nutritional benefits as vegetables, as well as attributes commonly found in meat, beans and grains. In World, today's it is high time people woke up to the beneficial effects of mushrooms and utilized against different diseases cancer, blood pressure, diabetes, hyper tension, heart disease, anaemia and high weight problem etc (Kannaiyan and Ramaswamy, 1980; Bisaria *et al.*, 1987) [8, 3]. Fighting qualities. Consider the nutritional importance with varietal variability it is therefore present study carried on Comparative study on Varietal Variation on Nutritional Quality of Mushroom., cancer and.

Materials & Methods

The nutritional variation in ten different varieties - Beech, Button, Crimini, Chicken, Enoki, Maitake, Oyster, Portabella, phoenix Shiitake, and Mushroom was studied by using methods

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Teklit, (2015) [10]. The survey and collection of information and materials was done from national and international level published article information and recommendation of food science specialist.

Results & Discussions

All the selected variety most of them have a number of nutritional properties (Table: 1) mentioned below. Among the nutritional properties (Table:2) only carbohydrate, protein, vitamins and energy was commonly found in the entire national and international level used selected mushroom variety but there is no any have cholesterol and sodium properties. Fat availability was found in chicken and phoenix mushroom only. The highest carbohydrate (34.36mg) having properties found in variety Chicken protein in Phoenix vitamin in Maitake and energy in Shiitake mushroom. There is no any

variety have cholesterol and sodium properties. Almost similar information was cited by (Singh *et al.*, 2008; Khatun *et al.*, 2012; Teklit, 2015) [7, 10].

Conclusions

In conclusion all the selected mushroom having more or less nutritional properties except Beech mushroom. The fat content was nil in all other then chicken and phoenix while cholesterol and sodium was also unavailable that's good remark for healthy diet. Over all Study of this topic it was concluded that chicken and phoenix mushroom was found more suitable to maintain the human body health and high level energy as per nutritional requirement. These nutrients contents made mushroom as a low energy, healthy foodstuff and these mushrooms may also be used as protein supplementary diet

Table 1: Physiological and nutritional properties of mushroom

S. No.	Mushroom Variety	Physiological Character	Nutritional Properties
1.	Beech (<i>Hypsizyugus tessellatus</i>)	Similar in appearance to whites but have a light-tan to rich brown cap and a firmer texture.	Good source of B vitamins riboflavin and pantothenic acid. Excellent source of niacin.
2.	Button Mushroom (<i>Agaricus bisporus</i>)	Classic appearance with a short, thick stalk and a white cap.	Good source of the antioxidant selenium, the B vitamins riboflavin, niacin and pantothenic acid and copper.
3.	Crimini (<i>plural criminis</i>),	Similar in appearance to whites but have a light-tan to rich brown cap and a firmer texture.	Excellent source of the antioxidant selenium, B vitamin riboflavin, and copper. A good source of phosphorus and B vitamins niacin and pantothenic acid.
4.	Chicken Mushroom (<i>Lyophyllum decastes</i>)	Tan to dark brown in colour, broad, umbrella shaped caps, wide open veils, tan gills, and curved stems	Excellent source of copper, antioxidant selenium, pantothenic acid, and B vitamins niacin.
5.	Enoki or Velvet stem mushroom (<i>Flammulina velutipes</i>)	Tiny, button-shaped caps and long, spindly stems.	Good source of B vitamins riboflavin and pantothenic acid. Excellent source of niacin.
6.	Maitake (<i>Grifola frondosa</i>)	A wild, rippling, feathery look with fan-like caps.	Good source of copper, B vitamins Riboflavin and niacin.
7.	Oyster (<i>Pleurotus ostreatus</i>)	May be gray, pale yellow or even blue, with a soft, velvety texture.	Excellent source of Niacin. Good source of copper and B vitamins riboflavin, and pantothenic acid.
8.	Portabella (<i>Agaricus bisporus</i>)	Classic appearance with a short, thick stalk and a white cap.	Good source of the antioxidant selenium, the B vitamins riboflavin, niacin and pantothenic acid and copper.
9.	Shiitake (<i>Lentinula edodes</i>)	Tan to dark brown in colour, broad, umbrella shaped caps, wide open veils, tan gills, and curved stems.	Excellent source of copper, antioxidant selenium, pantothenic acid, and B vitamins niacin.
10.	Phoenix Mushroom (<i>Pleurotus florida</i>)	Same as Oyster, abalone, or tree like shape, pale yellow or even blue, with a soft	Good source of the antioxidant selenium, the B vitamins riboflavin, niacin and pantothenic acid and copper.

Table 2: Varietal Variation of Nutritional Quality of Mushroom.

S. No.	Mushroom Variety	Nutritional Value						
		Energy (cal.)	Fat (g)	Carbohydrate (g)	Protein (g.)	Vitamin D (IU)	Sodium	Cholesterol
1.	Beech (<i>Hypsizyugus tessellatus</i>)	-	-	-	-	0	0	-
2.	Button mushroom (<i>Agaricus bisporus</i>)	19	0	3	3	6	-	-
3.	Crimini (<i>Vplural criminis</i>)	19	0	4	2	3	-	-
4.	Enoki (<i>Flammulina velutipes</i>)	31	0	7	2	4	-	-
5.	Maitake (<i>Grifola frondosa</i>)	26	0	6	2	955	0	-
6.	Chicken Mushroom (<i>Lyophyllum decastes</i>)	19	2.14	34.36	18.31	14.20	-	-
7.	Oyster (<i>Pleurotus ostreatus</i>)	28	0	5	3	25	-	-
8.	Portabella (<i>Agaricus bisporus</i>)	19	0	3	2	8	-	-
9.	Phoenix Mushroom (<i>Pleurotus florida</i>)	9.41	1.54	32.08	27.83	23.18	-	-
10.	Shiitake (<i>Lentinula edodes</i>)	48	0	12	1	24	-	-

References

1. Beelman RD, Royse D, Chikthimmah N. Bioactive components in *Agaricus bisporus* Imbach of nutritional, medicinal or biological importance. *Int J Med Mushrooms*. 2003; 5:321-337.
2. Beetz A, Kustudia M. Mushroom cultivation and marketing, 2004.
3. Bisaria R, Madan M, Bisaria VS. Mineral content of the mushroom *P. sajor-caju* cultivated on different agroresidues. *Mush. J. Tropics*. 1987; 7:53-60.
4. Chang ST. Global impact edible and medicinal mushrooms on human welfare in the 21st century: Non green evolution. *Int. J. Med. Mushr*. 2006; 1:1-7.

5. Hadar Y, Keren Z, Gorodecki B, Ardon O. Utilization of lignocellulosic waste by the edible mushroom *Pleurotus*. *Biodegradation*. 1992; 3:189-205.
6. Jaradat AA. Genetic resources of energy crops: Biological systems to combat climate change. *Aust J Crop Sci*. 2010; 4:309-323.
7. Khatun S, Islam A, Cakilcioglu U, Chatterjee NC. Research on Mushroom as a Potential Source of Nutraceuticals: A Review on Indian Perspective. *American Journal of Experimental Agriculture*. 2012; 2(1):47-73.
8. Kannaiyan S, Ramaswamy K. A hand book of edible mushrooms. Today and Tomorrows pub., New Delhi, 1980, 39-43.
9. Sadler M. Nutritional properties of edible fungi. *Brit Nutr Found Bull*. 2003; 28:305-308.
10. Teklit GA. Chemical Composition and Nutritional Value of the Most Widely Used Mushrooms Cultivated in Mekelle Tigray Ethiopia. *Journal of Nutritional and Food Sciences*. 2015; 5:5.