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Mushrooms Not Only Food but Also Treatment on Diseases: Review

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ABSTRACTS
Fungi as food from early history. The word mushroom comes from the French word for fungus and mold. Today, mushrooms are a popular and valuable food because they are low in calories, carbohydrates, fats, sodium, and cholesterol. In addition, mushrooms provide important nutrients such as salenium, potassium, riboflavin, nicotinic acid, vitamin D, protein and fiber. With a long history as a food source. Mushrooms are important for their healing properties and traditional medicine properties. It has been reported to have beneficial effects on health and the treatment of some illnesses. The properties of many dietary supplements are described by fungi such as Prevention or treatment of Parkinson's disease, Alzheimer's disease, high blood pressure, and high risk of stroke. They are also used to reduce the likelihood of cancer infiltration and metastasis due to antitumor properties. Mushrooms have antibacterial effects, strengthen the immune system and lower cholesterol levels. They are also an important source of bioactive compounds. Due to these properties, some mushroom extracts are used to promote human health and are seen as dietary supplements.

Keywords: Edible Mushroom:Antitumor;Antioxidative Cultivation collection ; Hypercholesterolemia;Antimicrobial.

I. INTRODUCTION

[2].In this review we present an overview of the anitimicrobial properties of mushroom extracts and highlight some of the active compound identified including low and high molecular weight (LMW & HMW Resp) compounds.[12].Although the edible wild mushrooms command higher prices than cultivated mushrooms people prefer to consume them due to their flavour and texure sparassis crispa is an edible mushroom recently cultivable in japan.[11].They are cultivated for these conventional value non conventional value as well as source of income for landless farmers.[9].Pleurotus ostreatus mushroom cultivation is very popular and next to Agaricus bisporus mushroom in India popularity and consumption.[8].It is estimated that approximately 50% of the annual 5 Million Metric Tons cultivated edible mushroom contain functional "neutraceutical" OR Medicinal properties.

[1].Mushrooms are macro fungi with distinctive fruiting bodies which are either epigenous or hypogenous and sufficiency conspicuous to naked eye to be handpicked.[1].Commercial mushrooms are produced on lignocellulose such as straw, dustard wood chips.[20].The nonsymbiotic microorganisms engineered or expensively selected to degrade xenobiotic hydrocarbons or modify heavy metal uptake of plants in soil re medications die back after their introduction into target soils.[22].Lignocellulosic materials commonly serve as a base substrate for mushroom production .cellulose ,hemicellulose and lignin are the major components of depends upon the plants.[2].In this review we present an overview of the anitimicrobial properties of mushroom extracts and highlight some of the active compound identified including low and high molecular weight (LMW & HMW Resp) compounds.[12].Although the edible wild mushrooms command higher prices than cultivated mushrooms people prefer to consume them due to their flavour and texure sparassis crispa is an edible mushroom recently cultivable in japan.[10].They are cultivated for these conventional value non conventional value as well as source of income for landless farmers[10][9].Pleurotus ostreatus mushroom cultivation is very popular and next to Agaricus bisporus mushroom in India popularity and consumption.[8].It is estimated that approximately 50% of the annual 5 Million Metric Tons cultivated edible mushroom contain functional "neutraceutical" OR Medicinal properties.

[14].The cultivation and collection of mushroom for appropriate growth and development almond mushroom requires relatively high temperature and air humidity as well as access of

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light.[16].In 2013,china produced 87%of the 35 billion kg of cultivated edible mushroom most of which being consumed in this country.[17].As a substrate for other mushroomfarming fungi as animal feed to promote health of animals and to produce packaging and construction material biofuels and enzymes.[18].The most popular edible mushroom in the western world is only at the fourth position of the most cultivated mushroom.[18].The cultivation of shield take mushroom in increasing rapidly in Bangladesh due to its nutritional and medical importance with excellent flavour and longer shelf life.[19].The edible straw mushroom volvariella volvacae sing.is grown on an industrial scale in many tropical and subtropical regions.

[28].Mushrooms have been a food supplement in various cultures and they are cultivated and eaten for their edibility and delicacy.[50].The cultivation and collection of mushroom for appropriate growth and development almond mushroom requires relatively high temperature and air humidity as well as access of light.[57].In 2013,china produced 87%of the 35 billion kg of cultivated edible mushroom most of which being consumed in this country.[58].As a substrate for other mushroomfarming fungi as animal feed to promote health of animals and to produce packaging and construction material biofuels and enzymes.

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[1].The most cultivated mushroom is agricus,bisporus followed by lentinus edodes pleurotus etc.china is the biggest produce of mushroom.[2].Inthis review we present an overview of the anitimicrobial properties of mushroom extracts and highlight some of the active compound identified including low and high molecular weight (LMW & HMW Resp) compounds.[46].Although the edible wild mushrooms command higher prices than cultivated mushrooms people prefer to consume them due to their flavour and texture sparassis crispa is an edible mushroom recently cultivable in japan.[28].They are cultivated for these conventional value non conventional value as well as source of income for landless farmers.[28].Pleurotus ostreatus mushroom cultivation is very popular and next to Agaricus bisporus mushroom in India popularity and consumption.[25].It is estimated that approximately 50% of the annual 5 Million Metric Tons cultivated edible mushroom contain functional "neutraceutical" OR Medicinal properties.

[23].Edible mushroom button mushrooms (Agaricus bisporus) are excellent examples of sustainable food production.[24].Mushroom is an important food that is evaluated as a delicacy in Asia and Central and Eastern Europe because of its taste, nutritional value, and biological activity.[24].The concept of mushrooms, rich in various elements such as selenium (Se), lithium (Li), zinc (Zn) and copper (Cu), has been developed for use as a functional food.[26].Eizuno reported that the polysaccharide (HEPS) contained in the fruiting body of H. Erainaceus has a beneficial effect on gastric cancer, esophageal cancer, and skin cancer.

II. TYPES OF MUSHROOMS:

[17].The top three are composed of lentinula (shiitake mushrooms and relatives), oyster mushrooms (oyster mushrooms), and wood ear mushrooms (wood ear mushrooms).[22].Several species of edible fungi belonging to the basidiomycetes of the genus Agarix, Hygrocyb, Chrysanthemum, Fulhamrina, Ganoderma, Helisium, Lentinula, Lentinus, Pleurotus, Tremera, and Volvaliera are cultivated commerciallyFungi),[22]. Pleurotus species (mushrooms), Lentinula edodes (shiitake mushrooms), Aurora species (wood ear fungi), Flammulina velupes (enoki mushrooms), Volvoriella species (rice straw mushrooms) are the most commonly cultivated in the world.

1.Hericium Erinaceus:

[25].Fungi provide a very nutritious food source, and recently after it was discovered that many of these fungi produce various metabolites that are useful in dietary supplements and medicines. Attention is focused on the second field of exploitation. (example: antitumor agents, immunomodulators, hypocholesterolemia agents) and the food industry (eg, fragrances). Most, if not all, fungal species contain biologically active polysaccharides. The data show the presence of 660 species from 182 fungi, including antitumor or immunostimulatory polysaccharides. Fruiting bodies, aquatic mycelium biomass and liquid

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culture broth are sources of bioactive compounds.[25].Mizuno reported that the fruiting body of h has a polysaccharide (heps). Erinaceus can have a positive effect on stomach, esophagus and skin cancer. H. Erinaceus (its offspring, mycelium, and products in the medium) also contains low molecular weight pharmaceutical ingredients such as the new phenols (hersenone a and b) and ya2. These may have chemotherapeutic effects on cancer. All keunet studied the lipid-lowering effects of exobiopolymers prepared from mycelial cultures in water.

2. Agaricus bisprous:

[22].The increasing trend of mushroom production is expected to continue. Fungi are heterotrophic organisms that require external nutrients to grow their vegetative mycelium and reach the reproductive (bearing) stage. Therefore, most cultivated bacteria are saprophytic or degrading bacteria. They can grow on a lignocellulosic substrate by producing multiple lignocellulosic enzymes that degrade the substrate during growth. Solid culture under controlled conditions is a common method used for commercial mushroom products. Therefore, the substrate for culturing Agaricus species must be prepared by solid aerobic fermentation (composting) to provide the Fmicrich complex to the required available carbon and nitrogen sources.

3. Oyster mushroom (pleurotus supp):

[35].Oyster mushrooms (Pleurotus spp.) Are valuable foods grown on an industrial scale around the world, but little is known about the microbial dynamics in producing oyster mushroom substrates. Therefore, the purpose of this study was to characterize microbial dynamics with chemical and biological tools. During substrate preparation, the enzymatic digestibility of the substrate increased by 77%, but the ratios of cellulose and hemicellulose to lignin decreased by 9% and 19%, respectively. Hydrolysis of fluorescein diacetate reached a minimum at the maximum temperature of the composting process and exceeded initial levels at the end of the process [35]. We evaluated the nutritional and antioxidant properties of three species of oyster mushrooms (Pleurotus spp.), Which are cultivated all year round, mainly in the plains of India. The highest protein content was in Florida oyster mushrooms (22-25% dw), followed by oyster mushrooms (20-22% dw) and oyster mushrooms (15-18% dw). Cholesterol content ranges from 0.6 to 0.8% DW, making it a low-cholesterol, protein-rich food. The three antioxidant properties were both enzymatic and non-enzymatic in nature. The reducing power, chelating activity for Fe2 +, and total phenol content were higher in Florida than in Florida. Pleurotus pulbularitus and P Citrino pleatus. For antioxidant enzymes, P. Florida shows the highest peroxidase and superoxide dismutase activity, P.I. pulmonarius showed the highest catalase activity. P Florida is P. It has higher antioxidant activity than pulmonarius and P. Citrinopileatus, emphasizing nutritional value as well as nutritional value.

4.Cordyceps militaris:

[36].Cordyceps militaris is a traditional Chinese medicinal food, and quality is an issue in mass cultivation. Many studies have shown that many microorganisms live in Cordyceps sinensis and play an important role for the host. In this study, our aim was to identify the microbial communities that inhabit Cordyceps militaris and analyze their potential functions. High-throughput sequences of 16S rrna and ITS genes were used to compare the diversity and composition of naturally occurring C-related bacterial and fungal communities. Military from Yunnan Province in southwestern China. The diversity and abundance of microbial communities and the number of functional genes in the bacterium were significantly higher in soil habitats than in fruiting bodies. Sclerotium and interstitial samples had the same microbial flora and function. The major bacterial strains were Pseudomonadota, Acidobacteriota, Bacteroides phylum, and actinomycetes, and the major fungal strains were ascospores. Phyllobacterium, a plant-based probiotic containing the growth-promoting bacteria Herbaspirillum and C. Quality of cordyceps militaris and promotion of cultivation were detected in fruiting body samples. Metabolism-related genes were more common in soil bacteria, while membrane transport genes were more common in C. Militaris endogenous bacteria. Our study is the first to demonstrate unexpectedly high diversity of microbial communities and bacterial functions in the natural cordyceps militaris using high-throughput sequencing, and our results show the development of C. Provides insights for studying the function of microorganisms in and quality of C. Militaris.

5.White button mushroom:

[31].In addition to increased shelf life and raw consumption, the indirect effects of exposure to non-pathogenic microorganisms on human health need to be considered. B. Possibility of

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introducing new symbiotic bacteria into the human gastrointestinal system (Leff and Fierer 2013). The dynamics, harvesting, handling and storage of cultivation in mushroom production are different from other fresh foods. Therefore, the profile and strain of the microbial population found in fresh mushrooms should be considered separately. This study aims to determine the dynamics of the microflora of freshly harvested and packaged white button mushrooms collected from two large commercial farms over a two-year period. Total Bioburden was determined as a safe mushroom guide at the time of harvest, after packaging, before transportation to the store, and finally. In addition, we analyzed the presence of thermostable E. Coli in fresh mushrooms to determine compliance with national guidance (Department of Health, 2000) and provided a science-based assessment of mushrooms.

6.Sparassis crispa:

[12].Sparassis crispa is an edible mushroom that has recently been cultivated in Japan. The polysaccharide fraction was prepared by repeated extraction from cultured S. Crispa with hot water (SCHWE), cold naoh (SCCA) and then hot naoh (SCHA). HWE was further separated by 1 volume (SCHWE1v) or 4 volumes (SCHWE4v) of ethanol precipitation fraction. According to chemical, enzymatic, and NMR analysis, the primary structure of SCHWE1v, SCCA, and SCHA was a 6-branched 1,3-beta-glucan with branches in approximately every three backbone units. All of these fractions showed antitumor activity against solid sarcoma 180 in ICR mice with severe vasodilatory and hemorrhagic reactions. After intraperitoneal or oral administration, these fractions also showed an increased hematopoietic response to cyclophosphamide-induced leukopenic mice.

7.Flammulina velutipes (enoki) species:

[40].Enokitake, also known as winter mushroom, is one of the most commonly cultivated edible mushrooms in Asia, especially in China, Japan and parts of India. Enokitake is ranked 6th in the world's total mushroom production. In addition, winter mushrooms have been reported to contain immunomodulators, antitumor substances, and antibiotics. Enokitake also helps human health, prevents more diseases, boosts the immune system, reduces intestinal fat, balances sugar content, promotes intellectual development, prevents allergies, and blood lipids. Produces biomedical compounds that lower and promote metabolism.

8.Auricularia spp species:

[41].Cultivation of the genus Auricularia. Record of the first mushrooms cultivated in China during the year 600 AD Chinese Materia Medica was a classic Chinese book showing how to grow old wooden ears in the Tang dynasty. (Lou, 1978; Quimio, 1979). Cultivation.

9. Sclerotinia sclerotiorum Species:

[42].The stems and pods of Hyacinth bean cultivated in the fields of farmers in the Gazipur district of Bangladesh were found to be rotten with almost 5% of Hyacinth bean plants. From the affected tissue, fungi with flaky mycelium and large sclerotium were isolated. Combining the results of morphological, molecular and pathological analyzes confirmed that the fungus was Sclerotinia sclerotiorum (Lib) debary. Inoculating healthy hyacinth bean plants and pods with fungi recreated the symptoms previously observed in the field. Three isolates from naturally infected plants were cross-inoculated with Hyacinth bean, Okra, and African-American Marigold and showed pathogenicity to these hosts. The optimum temperature and ph for its growth were 20 ° C and ph 5.0, respectively. Scleral development preferred at ph 5.0respectively. Scleral development was preferred at ph 5.0. Sucrose and mannitol were the best sources of carbon to support hyphal growth, while glucose was the most favorable for sclerotherapy.

10.Schizophyllum commune:

[39].Cultivation of the fungus Schizophyllum commune on different wood substrates P.N. dasanayaka * and S.C. Srilanka, Srilanka University Srilanka University Faculty of Botanicals Wijeyaratne Summary Schizophyllum commune is an edible mushroom that grows naturally on wood. This study focused on growing S.commune on a variety of woody substrates, as S.commune is not commercially grown. Pure cultures of S. Commune were obtained by growing fungal tissue in potato dextrose agar (PDA) medium. Spawning was made by growing mycelium on rice grains. The fungus was cultivated with sawdust from seven different wood substrates. Maximum yields were observed in jackfruit (Artocarpusheterophyllus) sawdust, followed by rambutan (Nephelium lappaceum) and country almond (Terminalia catappa) sawdust. No significant difference was observed when using

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mango (Mangifera indica), elephant apple (Dillenia indica), tulipwood (Harpullia arborea), and Thungfaa (Alstonia macrophylla) sawdust as substrates. The lowest yield was observed in sawdust of Thungfaa (Alstonia macrophylla). When the effects of several additives on yield were investigated, there was a significant difference in yield when rice bran and used tea leaves were used as additives.

11. Ganoderma lucidum :

[43].The objective of the study was to evaluate the production of two strains of Ganoderma lucidum on agricultural waste and carry out bromatological analyses of the basidiomata obtained from the cultivation. The experiment was carried out at the Mushroom Module at the School of Agronomic Sciences of the São Paulo State University (FCA/UNESP - Botucatu, SP, Brazil)and two strains were used (GLM-09/01 and GLM-10/02) which were cultivated on waste, oat straw, bean straw, brachiaria grass straw, Tifton grass straw and eucalyptus sawdust under two situations: with (20%) and without (0%) supplementation with wheat bran. All the waste was taken from dumps of agricultural activities in Botucatu-SP. Both treatments were carried out in 10 repetitions, totaling 200 packages. The mushrooms cultivation took 90 days. Next, the biological efficiency of the treatments and the bromatological analysis of the basidiomata were evaluated.

12. Auricularia polytricha:

[41].Auricularia polytricha was cultivated on a sawdust basal substrate supplemented with different proportions (30%, 45%, and 60%, respectively) of stalks of three grass plants, i.e., Panicum repens (PRS), Pennisetum purpureum (PPS), and Zea mays (ZMS), to determine the most effective substrate. The mycelial growth rate, total colonization time, days to primordial formation, biological efficiency and chemical composition of fruiting bodies were evaluated. The results indicated that 30PPS was the best substrate for mycelial growth of A. Polytricha, with a corresponding total colonization period of 32.0 days. With the exception of 30PPS, the total biological efficiency of all of the substrates containing P. Repens stalk, P. Purpureum stalk and Z. Mays stalk was higher ($P < 0.05$) than that of the control. The most suitable substrate with a high biological efficiency was 60PRS (148.12%), followed by 30ZMS (145.05%), 45ZMS (144.15%) and 30PRS (136.68%). The nutrient values of fruiting bodies were affected by different substrates. The ash contents of A. Polytricha cultivated on a substrate containing Z. Mays stalk were higher than that of the control; meanwhile, the protein contents of mushroom cultivated on a substrate containing P. Repens stalk (except substrate 45PRS) were higher than that of the control. The biological efficiency of the substrates was tested, and according to the results, it is feasible to use the stalks of P. Repens and Z. Mays on partially replaced sawdust to cultivate A. Polytricha.

13.Grifola frondosagrifola frondosa:

[12].Grifola frondosagrifola frondosa, commonly known as the dancing mush-room or Maitake is regarded to impart vitality to health. Ab-glucan purified from G.frondosa enhances the efficacyof anti-cancer agent cisplatin, checking the decrease in thenumber of immunocompetent cells, viz. Macrophages, dcsand NK cells in cisplatin-treated mice (Masuda et al. 2009).A chemically sulfated polysaccharide (S-GAP-P) derivedfrom water-insoluble polysaccharide of G.frondosamycelia was investigated for its anti-cancer effects aloneand in combination with 5-fluorouracil (5-FU) on humangastric carcinoma (SGC-7901) cells. Results showed thats-GAP-P inhibited SGC-7901 cells growth in a dose-dependent manner and induced cell apoptosis. The com-bination of S-GAP-P (10–50 lg/ml) with 1 lg/ml 5-furesulted in a significant inhibition on SGC-7901 cellsgrowth. The results confirm that S-GAP-P has evident anti-cancer activity through apoptotic induction and could sig-nificantly accelerate the anti-cancer activity of 5-FU (Shiet al. 2007). Cui et al. (2007) investigated the biologicalfunction of a novel polysaccharide-peptide GFPPS1b, iso-lated from cultured mycelia of G.frondosa GF9801.GFPS1b has anti-tumor activity which significantly inhib-ited the proliferation of human gastric adenocarcinoma(SGC-7901 cells), whereas slightly influenced the growthof human normal liver (L-02) cell line. When treated withgfps1b, SGC-7901 cells succumbed to apoptotis as evi-denced from the loss of villus and appearance of apoptoticbodies on the cell surface, volume reduction, and chro-matin condensation. The results of flow cytometry analysisand annexin V-PI assay showed that the SGC-7901 cellcycle was arrested in the G2/M

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phase. The apoptoticmachinery was associated with drop in mitochondrialtrans-membrane potential, up-regulation of Bax, down-regulation of Bcl-2, and activation of caspase.

14.Lentinus edodes:

[47]. Lentinus edodes is the most studied species and seems to have a broad antimicrobial action against both gram-positive and gram-negative bacteria. Plectasin peptide, obtained from Pseudoplectania nigrella, is the isolated compound with the highest antimicrobial activity against gram-positive bacteria, while 2-aminoquinoline, isolated from Leucopaxillus albissimus, presents the highest antimicrobial activity against gram-negative bacteria.

Table 1.1:Role of different species of mushroom in vital diseases.

Sr no	Name of disease	Types of mushroom	Mode of action	Image
1.	Hepatic injury	Lentinus edobes	Lentinus edobes extract prevented severity of liver damage caused by paracetamol as evidenced by low level of bilurubin in the serum	 (Fig.1.1)
2.	Hypercholesterolemia	Shiitake	Shiitake mushroom is used to lower blood serum cholesterol via.factor known as eritadenine.	 (Fig 1.2)
3.	Oidation (artheroscleros is,diabetes)	Agaricus bisporus	The antioxidant potential has been studied form water and methanol etract of fruitning bodies	 (Fig1.3)

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4.	Anaemia	Agricus bisporus	This mushroom is excellent source of folic acid the blood building vitamin prevents anaemia.	 (Fig1.4)
5.	Tumor Cell	Sparassis Crispa	Antitumor activity to the solid form of sarcoma 180 in ICR mice with strong vascular dilation and haemorrhage reaction.These hematopoietic response to cyclophosphamide induced leukopenic mice following intraperitoneal or peroral administration.	 (Fig1.5)
6.	Homeostasis	Pleurotur spp (Oyster mushrooms)	It is diet rich in fibres acts as substrate for microbes and aids in their proliferation . Thus, microbial digestion products enter the systematic circulation and help in maintaining energy homeostasis.	 (Fig1.6)

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7.	Aeromonas hydrophili	Pleucotus eryngii and Lactobacillus Plantarum	Innate immune response growth and protection against Aeromonas hydrophila .The results showed stimulation in growth ,immunity and disease resistance against pangasius bocourti.	 (Fig.1.7)

III. NUTRITION VALUES:

[22].New mushroom cultivation methods need to be developed that can guarantee improved mushroom productivity and quality.Global mushroom cultivation in 2019 is estimated at approximately 11.9 million tonnes per year.[22].China is the largest producer of mushrooms (8.9 million tonnes).[14].This species is also characterized by a high protein content and a low fat content.[15].The highest mycelial growth rate of 6 mm / day was observed in a medium with a carbon / nitrogen ratio of 80 using a test tube.[15].However, when a 500 ml flask was used (c / n), a growth rate of 7.5 mm / day was observed at a ratio of 80.[15].content of fruiting body ash, polysaccharides and crude proteins.[17].This market is represented by medicated mushrooms (38%) and wild (8%) and cultivated edible mushrooms (54%).Dietary fiber and protein (+ 2% fresh weight). [17].Their amino acid composition is superior to vegetables such as potatoes and carrots.[27].Regarding the nutritional value of cultivated nigerian mushrooms, there is little or no information about nigeria's wild edible higher mushrooms, especially in natural habitats.[30].Increasing consumer demand for high quality foods, increasing the nutritional value of this fungus, p. It has become essential for future cultivation of eryngii.[32].Most of the nutrients in mushroom compost remain from the mushroom harvest. This is illustrated by the fact that used mushroom compost is a valuable soil conditioner.

[27].The nutritional values of cultivated Nigerian mushrooms, there is little or no information available on wild edible higher fungi of Nigeria especially in their natural habitats[30].The increasing consumer demand for high-quality food, increasing the nutritional quality of this mushroom has become essential for the cultivation of P. Eryngii in the future.[32].Most of the nutrients in mushroom compost are left untouched by the mushroom crop, illustrated by the fact that spent mushroom compost is a valued soil conditioner.

[49].It was used a simple solid-liquid extraction procedure without saponification step and the chromatographic separation was achieved using a YMC-Pack Polyamine II column using an isocratic elution with hexane/ethyl acetate (70:30, v/v) at a flow rate of 1.0ml/min.

[50].Fio-a: A protein-containing xyloglucan, MW 280,000, polysaccharide: protein = 76:24 (w/w), polysaccharide consisting of Man:Gal:Xyl:Glc = 2:12:42:42 (molar ratio). [alpha]D23 + 25.3 degrees. FA-2: A protein-containing mannogalactan, MW 120,000, polysaccharide: protein = 76:16 (w/w), consisting of Xyl:Man:Gal = 9:35:56 (molar ratio), [alpha]D23 + 98.5 degrees. FII-1: A Protein-containing xylan (62:21 w/w). MW 200,000, [alpha]D23 + 8.7 degrees. FIII-1a: A protein-containing glucoxylan (15:71 w/w), [alpha]D23 + 30.7 degrees, MW 90,000, consisting of Glc:Xyl = 40:44 (molar ratio). FIII-2a: A protein-containing xyloglucan, MW 70,000, polysaccharide:protein = 69:3 (w/w), polysaccharide consisting of Xyl:Glc = 36:62 (molar ratio). [alpha]D23 + 38.6 degrees.

IV. MEDICINAL USES:

1. [27].Wild-grown mushrooms have been shown to be nutritious and medicinal.
2.[28]. Pleurotus tuberregium is a common species in southern Nigeria and is useful in several combinations to treat headaches, stomach ailments, colds and fever, asthma, smallpox, hypertension, but with Lentinus tuberregium and L. Tigrinus treats dysentery or purifies blood.

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3. [30].Auricularia species have traditionally been used to treat hemorrhoids and various gastric disorders.
4.[33]. Chanterelle, Boletus edulis, Lactifluus volemus. Used to kill flies while puff balls are used to heal wounds.
5 .[32].Fungi are used for antitumor, antiviral, and antioxidant effects.
6. [33].Bacteria and fungi that can be used for bioaugmentation to optimize composting of low quality raw materials.
7.[34].Where mushrooms play a more useful role in nutrition and medicine than in many Western countries, and where they provide livelihoods to more than 25 million mushroom producers.
8.[35]. Mushrooms are known to be effective in preventing various diseases such as cancer, hypercholesterolemia, and high blood pressure.
9. [1].Many wild mushrooms have been used medicinally because of their beneficial ingredients and biological activity. Consumers couldn't eat these mushrooms because they were relatively deficient. Mushrooms have many other human illnesses and nutrients that are beneficial to human health.
10.[4]. Wild mushrooms can be used indirectly as dietary supplements and / or functional foods.
11. [9].Fungi as a potential source of natural foods and medicines.
12.[6]. Edible mushrooms improve human health and quality of life.
13.[6]. Mushrooms have antibacterial effects, strengthen the immune system and lower cholesterol levels.
14.[3]. Mushrooms have long been used in medicine to prevent and fight many illnesses. The main medicinal uses of mushrooms discovered so far are antioxidants, anti-diabetic agents, cholesterol-lowering agents, antitumor agents, anticancer agents, immunomodulators, antiallergic agents, renal protective agents, antibacterial agents.
15.[4]. Mushrooms are valued as a very tasty food and a source of medicinal compounds [04], have health effects without known negative side effects, and are regular without harm. Can be used moderately.
16. [5].Mushrooms have an established history of use in traditional oriental medicine where most medicinal mushroom preparations are regarded as a tonic that is they have beneficial health effect without known negative side effect and can be moderately use on a regular basis without harm.
17.[10]. Medicinal mushrooms have been used to cure a variety of diseases.
18. [6].Mushrooms are important in traditional medicine because of their healing ability and properties.
19. [15].Lingzi has been a popular oriental medicine use to treat various human diseases.
20.[48].The most widely distributed molecules with antitumor properties in mushrooms are sesquiterpenes, triterpenoids, glucans and glycoproteins. Other important molecules are those with antioxidant properties as they can help the endogenous defence system against oxidative stress caused by the excess of reactive oxygen and nitrogen species (ROS and RNS). The non-controlled production of those species has been related to more than one hundred diseases, including several kinds of cancer, diabetes, cirrhoses, cardiovascular diseases, neurological disorders, as also to the aging process.

V. DIETARY USES:

1.[27]. Mushrooms are considered a rich food because they contain proteins, sugars, glycogen, lipids, vitamins, amino acids, and crude fibers.
2. [32].Cultivated mushrooms are an important food source for many people around the world and are produced worldwide.
3.[31]. White button mushrooms are very important for food safety and quality control.
4.[34]. Presence of lactic acid bacteria in the dietary supplement and food industry.
5.[34]. Common microbial communities in sugar mill cooling potentially useful industrial microorganisms in sugar mill cooling towers, bagasse leachates, and landfill sump liquid samples.
6. [4].Mushrooms are highly regarded as a very tasty food and a source of medicinal compounds.
7. [4].Wild mushrooms can be used for nutrition as a dietary supplement and / or functional food.
8.[1]. Currently, mushrooms have umami and are used in cooking. They have a unique salty taste that replaces the salt in foods.
9.[11]. Mushroom extract as a dietary supplement is based on the theory of improving immune function and promoting health.
10.[50]. Almond mushrooms are very tasty mushrooms with almond flavour .
11.[14]. So far, almond mushroom extract has been shown to have anti-cancer and antibacterial properties and lower blood cholesterol levels.

VI. CONCLUSIONS:

Mushrooms can be considered a low-fat health food. A low-calorie, low-fat diet is

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recommended for people with high cholesterol. Therefore, mushrooms are ideal for low calories, low fat composition and high essential fatty acid content. Most studies on fungal fatty acids are limited to specific fungal species. However, current results show that economically important wild edible mushrooms contain significant amounts of valuable fatty acids. Edible mushrooms and their by-products are widely involved in different fields for different purposes. Due to its nutritional and functional value, mushrooms are taken as a dietary supplement containing probiotics and fortified as an RTE and RTC food. The obtained bioactive molecules are used in foods. Apart from that, fungi play an important role in the production of biochar, bioadsorbents, carbon dots, media, nanoparticles and skin care formulations. All of the above products, synthesized or developed with the help of fungi, have shown effective results in in vitro studies. However, the edible film / coating and skin care formulations developed from these edible fungi are still limited to the in vitro level and have not yet been utilized at the commercial and industrial levels. In addition, these edible mushrooms and their waste have immense economic potential in a variety of industries, often leading to the synthesis of new products. Nevertheless, these edible mushrooms remain an undeveloped resource for a wide range of industrial applications. Therefore, wise and responsible management within the production system is urgently needed to explore the potential of these edible mushrooms.

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