INTERNATIONAL SOCIETY FOR MEDICINAL MUSHROOMS

International Society for Medicinal Mushrooms (ISMM) was founded in Vancouver, Canada. As a global non-profit organization, ISMM promotes the development of research, education, production, transportation, marketing and cultivation of medicinal mushrooms to have people to work towards common aspirations and goals. The integration will increase the impact of the international medicinal mushroom industry and benefit the health of people in the world.

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Call for Papers

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News Reports

Mr Mushroom Turns 85
On 26 September, a symposium was organized in Shanghai to celebrate the 85th birthday of one of the most famous and significant mushroom researchers of China (and beyond): Professor Shu-Ting Chang.
by Anton Sonnenberg
Wageningen UR Plant Breeding

S.T. Chang was born in a remote village in Shanxi Province in China. He had a troubled youth in a period of wars (with Japan; WWII, and the war of liberation) and was brought up mostly by his grandmother. Education was difficult since war disrupted most education systems. At the end of 1948 he fled with his grandma to Taiwan, where he continued his education at the Taiwan University, and received his Bachelor of Science in Agronomy in 1953. He married his wife miss Du in May 1955 and their first child was born in 1956. Chang was eager to further his education, and moved to Madison, Wisconsin in the USA, where he obtained his Master of Science in 1958 and his PhD in 1960. His main expertise was corn genetics and breeding. In 1960, he got a position at the Chinese University of Hong Kong where he was reunited with his family. He started as an assistant lecturer in the department of Chung Chi College, lecturing in genetics, plant anatomy and plant physiology. At the same time he wanted to continue his work on breeding corn that had started in Wisconsin. He leased a plot of land to grow his corn lines, but before he could collect the results, the whole crop was harvested by accident and that changed his whole career.

A new start
In Hong Kong Chang encountered delicious mushrooms in many dishes in Chinese restaurants. These appeared to be straw mushrooms (Volvariella volvacea) that were grown in the mainland of China and Hong Kong. He also came across a book written by R. Singer titled 'Mushrooms and truffles: botany, cultivation and utilization'. Chang decided then to change his work to the genetics and cultivation of the straw mushroom. Again by hiring a piece of land, he investigated cultivation methods, nutrient content, spawn preparation and later cytology and spore germination of the straw mushroom. He published his experiments in a number of journals and became a well know mushroom researcher, especially at the University of Hong Kong where he was known as 'Mister Straw Mushroom'. Chang improved the cultivation system of this mushroom considerably, by using cotton waste as a substrate instead of rice straw. He became gradually well known as THE mushroom expert, and as a result was invited by the UNESCO in 1978 to conduct a regional training course in Hong Kong on the cultivation of edible fungi. This type of training has been one of the most important activities of Dr Chang. Since then, he has given numerous trainings in Africa and South America, especially.

In 1962 Chang lost his wife. Avery sad and difficult period followed, having the responsibility to raise three children without a mother. Later, he met Judy Li-Ju Lee, later to be his wife. Dr Chang continued his work in Hong Kong and in 1971 was appointed by the colonial Secretary as head of the Hong Kong delegation to attend the 12th Pacific Science Congress held in Canberra, Australia. This conference brought him in contact with Dr
Jack Shepherd, who studies the infections of Eucalyptus trees by the fungus Phytophthora cinnamomi. He was offered a position for a year as a visiting research fellow to use his knowledge on fungal genetics to study the tree pathogen. He could receive at the same time a family immigration visa for a permanent stay in Australia. From now on, Chang’s family would stay in Canberra while he continued his career in Hong Kong. This connection to Australia brought Chang in close contact with the AMGA, and he held lectures in a number of their annual meetings.

Dr Chang’s hard work was awarded in 1978 with a professorship at the Chinese University of Hong Kong. Next to the straw mushroom, Chang also contributed significantly to the improvement of the cultivation of the oyster mushroom Pleurotus sajor-caju and shiitake (Lentinula edodes). He was also a cofounder of the World Society for Mushroom Biology and Mushroom Products launched in 1994, which organizes global conferences every three year. Four all the work Chang has done to improve knowledge on the biology of edible fungi and the large number of trainings he has given, even after his retirement, he has received a large number of awards, too many to mention here.

Symposium
The Symposium to celebrate Chang’s birthday was held in Shanghai. A ceremony was first held at the Institute for Edible Fungi of the Shanghai Academy of Agricultural sciences. Here, a small museum/exposition was opened dedicated to his merits for the mushroom research and mushroom industry community, displaying awards, memorabilia and photos.

In the afternoon, the Professor held a lecture on the work he has done on the mushroom during his long life. He mentioned the numerous pioneers in mushroom research he has worked with and especially elaborated on the trainings he gave in many countries. Especially interesting is his philosophy on mushroom displayed as a pyramid, where the broad base represent mushrooms as a source of nutrition, the middle part mushrooms as a tonic and the top representing mushrooms as a medicine, and the interrelationship between these parts fitting in the Chinese tradition that says ‘food is medicine and medicine is food’ Chang can still give an excellent lecture, despite the fact that his body is becoming a bit feeble now. A number of people presented subsequently a tributary lecture, memorizing his or her cooperation with Prof Chang during his career. Among those were Prof. Chang. Yu Li (Jilin University), Prof. Tan Qi (SAAS), Prof. Keto Mshigeni (University of Tanzania), Prof. Dan Royse (Penn State, retired), Prof. John Buswell (University of Hong Kong and SAAS, retired). In the afternoon, a whole range of people who closely collaborated with Chang gave a wonderful overview of his life and achievements.
The evening party was held at the first star Nanjiao hotel, again with a number of speeches more directed to Prof Chang’s and Mrs Chang’s personal lives. Moving was a speech of his class mate at the primary school in his village, and the presentation by two of his children. At the end all his children, grandchildren and family kneeled down to show respect to the couple in a fine Chinese traditional way. Food was served whole evening and many toasts were made in a very cheery atmosphere.

Note: The items on Prof. Chang’s life were extracted from the excellent biography ‘Shu-Ting Chang, Mr Mushroom’ written by Coriandra Li, published on the occasion of Chang’s 85th birthday.

From Mushroom Business, October 2015 edition 73, P46-47

The 9th Chinese Mushroom Days

The 9th Chinese Mushroom Days was held during November 15-17 in Zhangzhou, Fujian Province, China. Since the first Chinese Mushroom Days, which was launched in 2007, it was developed and has become an international and influential workshop with the highest reputation on its professional brand.

The event was organized by Zhangzhou Bureau of Agriculture and China Edible Fungi Chamber (CFNA), the Department of International Cooperation of the Ministry of Agriculture. The International Society for Medicinal Mushrooms (ISMM), International Society for Mushroom Science (ISMS) and World Society for Mushroom Biology and Mushroom Products (WSMBMP) supported this event. Professor Shu-ting Chang, the international famous mushroom scientist and the Honorary President of ISMS, Professor Yu Li, member of the Chinese Academy of Engineering and the President of ISMM, Professor Greg Seymour, and the Chairman of ISMS attended the opening ceremony. More than 500 scientists from China, America, Japan, Korea, the Netherlands, Russia, India and Malaysia participated in the event.

With the topic of “Adapting to the current economy situation, launching a new developing journey for the future”, the 9th Chinese Mushroom Days was consisted of a series of five workshops and a large-scale show of newly developed mechanical equipment and technologies. The experts from Sylvan America, Inc. and the L. F. Lambert
Spawn Company delivered keynote speeches of the workshops on the topic of “Technology for Industrialized cultivation of Agaricus bisporus”. The topic of the second section was “Going global for the Chinese edible mushroom industry” in cooperating with China’s “One Belt and One Road” strategy project. Some successful businessmen, experts and officers from the US, EU, and Russia introduced the status of producing and marketing for rare edible mushrooms overseas. In the third section, Japanese experts shared their relative work and experiences on industrialized cultivation of shiitake and maitake mushrooms. Afterwards, the forth and fifth sections were held, which presented the “Brand, capital operation and marketing for the Chinese edible mushroom industry” and “Release of newly developed equipment and technologies led by the manufacturers”, respectively.

Professor Yu Li, who witnessed the initiative and development of the Chinese Mushroom Days, said that this worldwide event had become an indicator of development of the edible mushrooms industry in China. As a high-level brand, it attracted the industry’s peers from all over the world; as a window, it helped to show the advanced technologies for modern cultivation of edible mushroom in China; as a platform, it realized intensive communications among experts, scholars and business people from industries seeking further development together; as a training school, it helped bring young people together from the various fields of edible mushroom research or industry and encouraged them to get more education to help in the cultivation, promotion and advancement of the medicinal mushroom industry.
The 9th International Medicinal Mushroom Conference

The International Medicinal Mushrooms Conference will be held in Palermo from 24-28 of September 2017 organized by the University of Palermo.

First circular will be distributed in February-March 2016
Web site will open in January 2016
Registration will begin in March-April. After publishing the first circular, abstracts can be submitted until the end of December 2016
The 19th ISMS Congress Welcome Letter

by Piet Lempens, Chairman ISMS 2016 Organizing Committee

More and more details begin to give shape to the very special mushroom event in The Netherlands next year. It all starts on the 29th of May and continues until the 3rd of June. The Dutch mushroom industry and scientific community together with the cities of Amsterdam and ‘s-Hertogenbosch are looking forward to your arrival.

A number of scientific key-note speakers have already committed themselves to the 19th ISMS-Conference. Their presentations promise to be inspiring. A call for abstracts has been launched for further scientific presentations on a number of major themes related to mushrooms. Technical excursions to the Dutch mushroom industry will constitute a significant part of the program to highlight the latest innovations on various topics. Sponsors will use the occasion to present themselves and to meet a wide audience involved in mushrooms, and their response is enthusiastic. And of course there are some free moments to make your own program with those whom you will meet.

The 34th edition of The Mushroom Days is expected to be one of the largest trade shows ever for the global mushroom industry. It is absolutely the place to be for everyone involved in the mushroom business. The previous edition hosted 83 exhibiting companies and attracted over 2,200 visitors from 62 countries.

The two events will partially overlap in time, but will also have joined items to maximise the interaction between science and business. The one has no future without the other. Please make sure you make your arrangements regarding registration and hotel reservation in time. The sooner the better. Both websites will be constantly updated with the latest relevant information about this very special week on mushrooms.

The organisation is already looking forward to welcome all of you in Amsterdam and ‘s-Hertogenbosch.

Research progress

Diabetes mellitus (DM) is accompanied by the development of hypoxia, which disturbs the physicochemical properties of the erythrocyte membrane and further leads to the occurrence of anemia and a reduction in lifespan. In response, the body activates compensatory reactions directed at a renewal of the red blood cell pool and an increase in tissue oxygenation. In this study, the influence of *Agaricus brasiliensis* and *Ganoderma lucidum* medicinal mushroom mycelia on the erythron system of control and streptozotocin (STZ)-induced diabetic rats were investigated. Wistar outbred white male rats were intraperitoneally injected with saline (control rats) or STZ (50 mg/kg, DM rats) and orally treated with placebo or submerged culture mycelium powder (1 g/kg/day) for 2 weeks. Peripheral blood erythrocytes were collected. Hypoglycemic effects of *A. brasiliensis* and *G. lucidum* occurred in the diabetic rats, as evidenced by decreased blood glucose and glycosylated hemoglobin concentrations. In STZ-diabetic animals treated with submerged culture mycelium powder, an increase in the number of erythrocytes in the bloodstream (an aniatemic effect), erythrocyte resistance to acid hemolysis, and the normalization of fetal hemoglobin concentrations, along with the intensification of erythropoiesis were observed. In conclusion, our results suggest that in diabetic animals *A. brasiliensis* and *G. lucidum* have therapeutic effects that manifest in hypoglycemic and antianemic action.


Wild edible mushrooms occupy an important place in the traditional food habits of the ethnic tribes of India. Specimens collected from the forests and local markets of Meghalaya, India were affiliated with ten different species. The mushroom extracts were analyzed for nutrient and mineral compositions along with phenolics, flavonoids, ascorbic acid, β-carotene, and lycopene. These extracts were also investigated for antioxidant, anti-inflammatory, and antimicrobial activities. Fungal extracts were found to be rich in nutrients and minerals, and exhibited potent antioxidant, anti-inflammatory, and antimicrobial activities under assay conditions. The nutrient profiles generated for each of these ten species revealed them to be rich sources of functional nutraceuticals.


A complex mixture of free fatty acids (1), cerevisterol (2), a sphingosine (3), and a complex mixture of diacylglycerophospholipids (4) were isolated from the fruiting body of the basidiomycete mushroom *Pseudoinonotus dryadeus* and subjected to spectroscopic analyses. The antioxidant activities of the whole extract of the fungus, of the isolated fractions, and of compounds 1–4 were evaluated in two *in vitro* model systems: 2,2-diphenyl-1-picryl-hydrazyl (DPPH) and superoxide anion. In each system, the extract of fungus and compound 2 showed the same free radical scavenging activity (with SC50 data of 18.27 µg/mL and 5.75 µg/mL, respectively) compared with the positive control quercetin (DPPH assay). Compounds 1–4 were isolated from *P. dryadeus* for the first time.

Hepatocellular carcinoma is a cancer of high mortality; therefore, the effective therapy on this cancer is an imperative issue. Recently, anticancer agent combined with natural products has been demonstrated to increase apoptosis of various cancer cells effectively. Accordingly, we investigated the apoptotic effect and possible mechanism of the ethanol extract from *Taiwanofungus salmoneus* (=*Antrodia salmonea*) mycelium (TsE) alone or in combination with cisplatin in SK-Hep-1 cells. In this study, the proliferation of SK-Hep-1 cells could be inhibited at various concentrations of TsE for 24 h whereas TsE combined with cisplatin would inhibit the cell proliferation more notably. Moreover, the DNA damage and the interruption of cell cycle of SK-Hep-1 cells would be effectively raised after incubation with TsE combined with cisplatin for 24 h. The apoptosis of cells was dramatically induced, and the expression of caspases 3, 8, and 9, apoptosis-related protein, were significantly upregulated. Therefore, we proposed that the TsE combined with cisplatin inhibited cell proliferation by elevating sub-G1 phase, inducing DNA damage, activating caspases 3, 8, and 9 activities, and triggering cells apoptosis. These results reveal that TsE could be a potential adjuvant chemotherapeutic agent.

Points and Reviews

Medicinal Mushrooms with Anti-phytopathogenic and Insecticidal Properties

(Chapter 8)

by Gayane S. Barseghyan, Avner Barazani and Solomon P. Wasser
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8.1 INTRODUCTION

In the early 1950s, the agrochemical industry provided agriculture with a vast array of chemicals for crop protection including viricides, fungicides, bactericides, insecticides, and nematocides. Pathogenic organisms are mainly controlled chemically; however, the use of synthetic compounds is limited due to several undesirable aspects such as carcinogenicity, teratogenicity, acute toxicity, and the requirement of an extended degradation period with consequent development of environmental pollution problems (Sokovic’ et al., 2013). The new awareness of modern consumers about these problems has created a “green” consumer profile that demands the removal of synthetic chemicals from food production and preservation, together with extended shelf life for the majority of food products. Altogether, this demand forces the scientific community and agroindustrial and pharmaceutical companies to search for natural compounds that will satisfy the consumer (Harvey, 2008). Furthermore, there is growing concern about chemical protection because of their undesirable side effects in humans and other target organisms, and their behavior and fate in the environment (Jespers, 1994). Recently, interest has been growing in natural products derived from mushrooms due to their availability, fewer side effects, and lower toxicity as well as better biodegradability, which is important in the agricultural industry.

The number of mushroom species on Earth is currently estimated at 140,000, yet perhaps only 10% (approximately 14,000 named species) are known to science; 2000 of these are safe for human consumption, and about 660 possess medicinal properties. In the second half of the twentieth century, mushroom-producing technologies have grown enormously, and the value of world mushroom production in 2011 was estimated to be worth about US$60 billion. Many pharmaceutical substances with potent and unique properties have recently been extracted from mushrooms. In particular, and most importantly for modern medicine, medicinal mushrooms contain an unlimited source of polysaccharides and polysaccharide–protein complexes with anticancer and immunostimulating properties. Many, if not all, higher Basidiomycetes mushrooms contain biologically active polysaccharides in their fruit bodies, cultured mycelia, and cultured broth. The data on mushroom polysaccharides today have been summarized for 660 species and intraspecific taxa from 182 higher Hetero- and Homobasidiomycetes.

Numerous excellent scientific investigations and review articles have been published on the subject of biologically active secondary metabolites from higher Basidiomycetes (Anke, 1989; Lorenzen and Anke, 1998; Wasser and Weis, 1999a,b; Wasser, 2002; Brandt and Piraino, 2000; Reshethnikov et al., 2001; Abraham, 2001; Zjawiony, 2004; Rai et al., 2005; Robles-Hernández et al., 2008, Barros et al., 2007; Fagade and Oyelade, 2009, Hearst et al., 2009; Beattie et al., 2010; Fu et al., 2010; Saddiqe et al., 2010; Yu et al., 2011; Li et al., 2012; Wang
Medicinal mushrooms offer an advantage in that their active components are safe for humans. Many compounds such as β-D-glucans, heteropolysaccharides, glycoproteins, lectins, and terpenoids inhibit tumor cells and have not shown negative effects on treated patients. The antimicrobial properties of certain Basidiomycetes provide human and plant pathogen control that is generally safe and effective. Several species of Basidiomycetes mushrooms have demonstrated antibacterial activity against human pathogens; others have shown antifungal activity against both human and plant pathogens, while others have inhibited phytopathogenic nematodes.

In this context, systematic screening of secondary metabolites of higher Basidiomycetes may result in the discovery of novel and unique sets of compounds with the potential to address agricultural and medicinal challenges.

This paper gives an overview on the activity of mushroom compounds as well as their chemical composition and potential uses.

*The full paper was published in Mushroom Biotechnology. Chapter 8, Elsevier Inc., pp.137-153.*

**The Role of Culinary-Medicinal Mushrooms on Human Welfare with a Pyramid**

**Model for Human Health (Part III)**

by Shu Ting Chang1,2 & Solomon P. Wasser2

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**ABSTRACT:** Mushrooms are part of fungal biota characterized by wonder. They grow from lignocellulosic wastes: yet they become so bountiful and nourishing. Mushrooms are environmentally friendly. They biosynthesize their own food from agricultural crop residues, which would otherwise cause health hazards. The extant records show the continued use of some mushrooms, e.g., *Lentinus edodes*, *Ganoderma lucidum*, and *Cordyceps sinensis*, all of which are now centuries old. This review presents a pyramid model for mushroom uses (industries), as food, dietary supplements (tonic), and medicine. A regular intake of mushrooms can make us healthier, fitter, and happier, and help us to live longer. The sense of purpose and vision for the mushroom industries is also briefly discussed. A variety of mushrooms have been used traditionally in many different cultures for the maintenance of health and in the prevention and treatment of various diseases. A total of 126 medicinal functions are thought to be produced by medicinal mushrooms (MM) and fungi, including antitumor, immunomodulating, antioxidant,
radical scavenging, cardiovascular, anti-hypercholesterolemia, antiviral, antibacterial, anti-parasitic, antifungal, detoxification, hepatoprotective, and anti-diabetic effects. Special attention is paid to mushroom polysaccharides. Many, if not all, higher Basidiomycetes mushrooms contain biologically active polysaccharides in fruit bodies, cultured mycelium, and cultured broth. The data on mushroom polysaccharides are summarized for approximately 700 species of higher Hetero- and Homobasidiomycetes. In particular, the most important for modern medicine are polysaccharides with antitumor and immunostimulating properties. Several of the mushroom polysaccharide compounds have already gone through phase I, II, and III clinical trials and are used extensively and successfully as drugs in Asia to treat various cancers and other diseases. Mushrooms are superior sources of different types of dietary supplements (DSs) (tonics). The advantages of using mushroom-based DSs as a matter of safety (as opposed to herbal preparations) are: (1) The overwhelming majority of mushrooms used for production of DSs are cultivated commercially (and not gathered in the wild). (2) Mushrooms are easily propagated vegetatively and thus keep to one clone. The mycelium can be stored for a long time, and the genetic and biochemical consistency can be checked after a considerable time. (3) The main advantage, in our opinion, is that many mushrooms are capable of growing in the form of mycelial biomass in submerged cultures. In this review, we discuss legal and regulatory issues introducing and controlling DSs from MMs in different countries, including the United States, the European Community, Australia, New Zealand, Japan, and P.R. China, and guidelines of the World Health Organization. One of the targets of the present review is also to draw attention to many critically important unsolved problems in the future development of medicinal mushroom science in the 21st century.

KEY WORDS: medicinal mushrooms, mushroom industrial uses, dietary supplements (tonics), mushroom medicine, botanical drugs, edible, inedible, hallucinogenic, poisonous, mushroom products, polysaccharides, polysaccharide-protein complexes, beta-glucans, antitumor, immunomodulator activity, macrophages, *Ganoderma lucidum, Lentinus edodes, Trametes versicolor, Cordyceps sinensis*

III. TOTAL UTILIZATION OF LIGNOCELLULOSIC BY-PRODUCTS (WASTE MATERIALS) BASED ON MUSHROOMS

As mentioned, the population of the world is expected to continue increasing in the 21st century, so the amount of food and the level of medical care available to each individual, especially those living in less developed countries, will decrease. Environmental pollution will also become a more serious problem. However, the world has an immense amount of lignocellulosic by-product resources, which, like solar energy, is sustainable. This resource has been considered insignificant or of no commercial and certainly no food value, at least in their original forms. It should be noted that significant research funds have been set aside to search for increased productivity in core products, such as the kernel of maize, the grain of the cereal crop, the oil in coconut, the cellulose in trees, the fiber in sisal, and coffee in the coffee cherry. However, few research funds have been reserved to search for the possible reuse of many by-products, e.g., cereal straw, coconut coil, spent coffee grounds, etc., which are usually considered waste materials. This concept and practice have been called linear thinking on core products of agricultural industry in the 20th century. This means that the by-products from processing of core products are usually considered as wastes and are not properly reused (Fig. 2). When they are carelessly dispensed to the surrounding environment by dumping or burning, these so-called wastes are bound to lead to environmental pollution and consequent health hazards. It should be emphasized that these lignocellulosic wastes are actually a kind of natural resource or raw material, if they could be properly managed and utilized, then eventually greater economic growth would be possible. The second approach is cluster thinking, which should be applied to agriculture-based industry in the 21st century (Fig. 3). In other words, the by-products in processing core products should be reused/treated as raw materials for the production of secondary or tertiary core products; such materials as cereal straw, coffee pulp, spent coffee grounds, sisal waste, all can be used to grow mushrooms. After harvesting mushrooms, the spent compost can be used as feed materials for animals or for growing earthworms. Afterward, the residues can be used as soil conditioners or crop fertilizers. In the whole exercise, there is no waste produced. This is the concept of zero emissions or total productivity. This approach conceptualizes the conversion of biota by-products, which are generally viewed as wastes, into resources, thereby creating employment, reducing poverty, and generating opportunities in affected areas.

![Figure 2. 20th century—linear thought on agricultural/mushroom-based industry](image-url)
Mushrooms, like all other fungi, lack chlorophyll and are non-green organisms. They cannot convert solar energy through the process of photosynthesis to organic matter, as green plants do, but they can produce extensive enzymes, which can degrade lignocellulosic materials as nutrition for their growth and fruiting. This is to demonstrate the impressive capacities of mushrooms for biosynthesis, which is different from photosynthesis by green plants. Mushrooms not only can become nutritious protein-rich food, but also can be utilized as nutriceuticals or even as pharmaceutical products. Mushrooms have great potential for domestic consumption, as well as for export, providing international quality standards and in maintaining timely supply schedules. The most significant aspect, according to the cluster approach to mushroom-based industry, is to recycle the by-products (wastes) in the course of each stage of mushroom production and to create a pollution-free environment. By blending the advance in basic biological knowledge with that of practical technology, a mushroom-related industry based on utilization of the lignocellulosic waste materials that are abundantly available in rural and urban areas can have a positive global impact on long-term food nutrition, health enhancement, environmental conservation and regeneration, and economic and social benefits. Therefore, the significant impact of mushroom cultivation and mushroom derivatives/products on human welfare in the 21st century could be considered globally as a non-green revolution, but it must be implemented according to locally available substrates, labor, and climatic conditions.

IV. DEVELOPMENT OF WORLD MUSHROOM INDUSTRY

Before the 1st International Conference on Mushroom Biology and Mushroom Products in 1993, the international mushroom movement/industry concentrated mainly on the production of fresh, canned, and dried mushrooms consumed for food, valued at US$8.5 billion in 1991. This was considered to be only one leg of the mushroom industry. However, US$1.2 billion was estimated as having been generated from MMs (mushroom products) in the same year, which did not receive prominent attention. During that conference, the MMs and their products used as tonic and dietary supplements/herbal medicines had been promoted and were considered to be the second leg of the mushroom industry. Since then, the MM movement has rapidly expanded worldwide. This means the second leg of the mushroom industry has been growing stronger and stronger. The world market for
edible mushrooms was estimated in 2006 at around US$36 billion, and MM products were valued at US$16 billion.

There are four big international bodies/organizations/forums which target each of these segments of the mushroom industry, and they have subsequently evolved and have served to bring their respective divisions to the forefront of international attention. The International Society of Mushroom Science (ISMS), focusing on edible mushrooms, was established in 1950 in England. Since then, ISMS congresses have been held every 3-4 years, and the 18th ISMS Congress will be held in 2012 in Beijing, China. The World Society for Mushroom Biology and Mushroom Products (WSMBMP), focusing on mushroom biology and MM products, was formed in 1993 in Hong Kong. The WSMBMP hosts an international conference every three years; the 7th International Conference on Mushroom Biology and Mushroom Products was held in 2011 in France. The International Workshops on Edible Mycorrhizal Mushrooms (IWEMM), which relate primarily to wild mushrooms, were inaugurated in 1999 in Sweden. These workshops are held every two years. The IWEMM-6 was held in Morocco in 2011. The international movement for the medicinal segment of the mushroom industry received a further boost following the launch in 1999 of the International Journal of Medicinal Mushrooms (IJMM). Two years later, in 2001, the inaugural International Medicinal Mushroom Conference (IMMC) was held in Kiev, Ukraine. These conferences are held at two-year intervals. Compared to a four-legged horse, these four international mushroom organizations have carried the world mushroom industry forward. They have each done much to promote their respective areas of primary focus, not least by bringing together scientists and growers for mutually informative interactions at a personal level, by encouraging research and by providing platforms for the dissemination of valuable research and commercial information. The rider represents the scene of mushroom consumers, who are the driving force for expanding mushroom markets and for enhancing mushroom research and mushroom industry development. (...to be continued)
Call for Papers

Aiming to build the relationship between the members and the Society, the publication of the newsletters was proposed before the launching of the Society. The newsletters represent one of the key official publications from the Society. Contents of the newsletters will include notifications of the decisions made by the committee board, reviews or comments contributed by ISMM committee members, conferences or activities to be organized, and the status updated in research, industrialization, and marketing for medicinal mushrooms. The newsletters will be released quarterly, by the first Monday of every January, April, July, and October, with possible supplementary issues as well. The Newsletter is open to organizations or professionals to submit news, comments, or scientific papers relating to medicinal mushroom research, marketing, or industry.

Contact information

For any inquiry in membership enrollment, subscribing to ISMM newsletters, upcoming activities and events organized by ISMM, or submitting news reports, statements, or manuscripts to the Society, please contact the secretariat’s office in Beijing, China.

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