



January 2007 - No 106

NEWSLETTER OF THE INTERNATIONAL SOCIETY FOR MUSHROOM SCIENCE

Mushrooms International is the Newsletter of the International Society for Mushroom Science and is published 4 times a year. It aims to include news and views from around the world (concerning mushroom biology, business, trade and growing practices) and a list of forthcoming events. We welcome articles, news items and suggestions for topics of general interest to our readers.

Please send material for inclusion in Mushrooms International to

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MEMBERSHIP:

The International Society for Mushroom Science (ISMS) has an open membership policy. Any individual person wishing to join should send a cheque for €45 (euros) to the Treasurer at the address on the last page.

The Society is not responsible for individual opinions expressed in Mushrooms International. Editorials do not necessarily express the views of ISMS Council.

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EDITORIAL - YOUR NEWSLETTER STILL NEEDS YOU!

This is another reminder that this Newsletter can be a very valuable communication organ for the Society, keeping members up to date with matters from around the world on mushrooms and mushroom science. Members might also consider using the Newsletter as a forum for the exchange of ideas and the presentation of views and comments on issues of importance. Contributions from members are essential if the Newsletter is to achieve its full potential and, once again, members are urged to submit material.

Included in this issue are items about the mushroom industries of the Gulf States and also of Russia. It is interesting to learn about the challenges facing the industries in those areas. There is also a report about a joint Australian/New Zealand R & D project which aims to develop innovative disease diagnostic methods utilising molecular technologies to detect and quantify pathogens.

A tribute to Paul Wuest, who sadly passed away last year, has been provided by Dr David Beyer.

Society information includes reports on conferences in Beijing and Uganda, the annual financial reports and a list of coming events.

Tony and Frances Biggs

DEADLINE FOR SUBMISSION OF ARTICLES FOR ISSUE 107: 31ST MARCH 2007 - Articles should be sent to president@isms.biz

FROM THE PRESIDENT'S DESK



Happy New Year to everyone. 2007 is shaping up to be a very busy year in the mushroom industry around the world and for ISMS and its members.

I am writing this column on my way to the North American Mushroom Conference in San Diego so I'll keep it short and sweet so its gets done before I hit the ground in the US.

Your executive committee met via teleconference in December to set the Operating Plan and Budget for this year. The documents are published elsewhere in this newsletter. Its pretty much business as usual and I welcome any feedback from members. Membership dues will be sent out next month and prompt payment will be appreciated.

The 2008 Cape Town Congress Committee is working hard preparing for what will be a great event. If you are considering presenting a paper or poster please get a message to the committee quickly to indicate your intentions.

I mentioned in the Annual Report that this is the last edition of MI that Tony and Frances Biggs will be editing for us. They've done a great job and I thank them on behalf of the Society. If anyone would like to be considered for the role I'd appreciate an email as soon as possible so we can get things underway for the May edition.

I look forward to catching up with as many of our members in San Diego as possible.

Cheers,
Greg Seymour
President

MUSHROOMS IN THE GULF STATE

by Nilesh Pakale

The mushroom - (Fattar) - is uncommon in the Arabian diet. It has been introduced only relatively recently from Europe. Natural occurrence of edible fungi in the region is restricted to the Salalah region of the Sultanate of Oman, where some mycorrhizal fungi and wild mushrooms are collected in the rainy season (kharif). The growing of mushrooms in the Middle East began early in the 19th Century, but commercial production did not begin until towards the end of the 19th Century. The climate in many Gulf States is unsuitable for compost manufacture compared with neighbouring countries, such as Saudi Arabia, Qatar, UAE, Bahrain and the Sultanate of Oman. Compost production is also hindered by the limited availability of traditional raw materials.

The most commonly grown commercial mushrooms are white buttons (*Agaricus bisporus*). Oyster mushrooms (*Pleurotus*) are grown on a seasonal basis in some regions of The Gulf, making up about 0.5% of total mushroom production.



Overview of the Oman farm in the background with its composting facility

The first small-scale white button mushroom growing facility was started in Oman in 1994. Following the success of this pilot venture, a large farm was built in Oman in 1998 with an annual production capacity of 3000 tonnes. In 2000, small farms began to be developed in Saudi Arabia, Bahrain & UAE with a combined capacity of 1500 tonnes per annum. Recently, the Saudi farm has increased production capacity by 35%.

These farms have Dutch shelf systems, managing their phase II compost in tunnels or traditional growing rooms. Some small growers use the bag system. With raw materials, the carbon source varies, from the most usual wheat straw & horse manure to oat straw and Rhodes grass. Nitrogen is mainly sourced from chicken manure. However, use of horse manure is limited due to the use of paper and wood shaving bedding material.

In general, mushroom farms have less than 50% of technical management positions being held by expatriates. Locals do the picking for the fresh market, mostly on a piece rate system. Processing is not an economically feasible option because of cheap Chinese imports. European companies supply the technical advice and equipment, but the basic production processes are significantly modified to comply with local adverse climatic conditions and availability of raw materials.



Mushroom sales display with no temperature control

In most cases, the fresh market is evenly distributed between institutional and supermarket outlets. Mushroom display facilities vary from outlets with no temperature control (markets and small retail stores) to more sophisticated retail outlets with cool display facilities. Hotter climates in the Gulf States (up to 50 degrees Celsius) impact not only on the production processes but also on the postharvest distribution cool chain.

The use of processed mushrooms has dropped from almost 65% of total mushroom sales 8 years ago to 20% today. Fresh mushrooms are available prepacked in 250gm. punnets and loose in 4 to 6 kg.boxes. Sales of giant mushrooms (>60 mm diameter) make up slightly more than 1% of total sales. The fresh mushroom market requirement has increased for the last couple of years by 10% per annum with supply coming mostly from local Gulf State farms. However, about 10-15% of market share is still taken by mushrooms imported from Holland for certain consumer groups.



One the Gulf Mushroom fleet of distribution trucks



Temperature controlled displays

At this time, the Gulf State industry is not organized like those in Europe, North America, Australasia, South Africa, etc. but countries do have their own R&D programs. Much work is still required on postharvest distribution systems in order to maintain the quality and shelf life of fresh mushrooms. There is strong need for involvement of local government organizations and co-ordinated mushroom industry activities to spread awareness about the health and nutritional benefits of mushrooms in the human diet.

For industry growth and increased mushroom sales to continue, the consumer base needs to expand beyond the present situation where sales are

mainly to tourists and expatriates.

Author details:

Nilesh Pakale is Production Manager and senior grower with Gulf Mushroom Products Co. SAOG in the Sultanate of Oman where he has been employed for the last 6 years. With a Masters degree in Agriculture, specializing in Microbiology, he is responsible for all aspects of composting and mushroom growing. In addition, he provides consultancy to mushroom farms in India.

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BEIJING INTERNATIONAL SYMPOSIUM, A GREAT EVENT!



From August 17 to 19, the International Symposium on Mushroom Quality Improvement and Pest and Disease Control hosted by Beijing Association for Science and Technology was held in Beijing, China. This symposium was co-organized by the Chinese Academy of Agricultural Sciences (SAAS), China Agricultural University (CAU), Beijing Academy of Agricultural and Forestry Sciences (BAAFS), Beijing Society for Mushroom Science, Beijing Society for Plant Pathology and Edible Fungi Chamber, China Chamber of Commerce of Imp & Exp of Foodstuffs, Native Produce and Animal By-Products (CFNA).

The host invited some well-known mushroom experts including Prof. Shu-Ting Chang, Dr. Anton Sonnenberg, Dr. Katsuji Yamanaka, Dr. Danny Rinker and Dr. Clifford Keil to make key presentation on the symposium. This event attracted over one hundred researchers,

growers and traders at home and abroad to be present. Totally, twenty-three persons gave speeches in the meeting and twenty-eight papers were accepted. The attendees exchanged and discussed the latest information and advances on mushroom science covering genetic breeding, composting, pest and disease prevention, taxonomy, biochemistry and molecular biology in different countries.

There is no doubt this was a wonderful event for Chinese mushroom lovers. "I learned a lot on how to deal with the different diseases that often bothered me before.," a grower from Shandong province said with joy. Admittedly, there is huge space to improve for China's mushroom industry although China remains the leading producer in the world now. It is time for the Chinese mushroom industry to reconsider how to unite the strength of government, growers, researchers and traders to form a sustainable and competitive development system. In this regard, the Dutch mushroom industry is good example. pathogens.



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MUSHROOM DISEASE DIAGNOSTICS

A multi-site R & D project with researchers from Australia and New Zealand aims to develop protocols for the detection of

mushroom diseases before symptoms appear.

The 'Development of a Disease Monitoring System for the Australian Mushroom Industry' project is using molecular DNA technologies to detect pathogens at a very early stage so that a commercial service can be provided for growers to better manage diseases.

A workshop on mushroom disease diagnostics was held immediately prior to the recent industry conference in Adelaide, involving Dr Anton Sonnenberg from The Netherlands, Dr Helen Grogan from Ireland, Professor Peter Romaine from the United States and Dr Linda Meyer from South Africa as well as the project team members from Australia and New Zealand. The overseas scientists have a great deal of experience and valuable resources for molecular diagnostics of mushroom diseases and have committed their support for the project.

Dr. Sonnenberg explained the Dutch emphasis on developing environmentally and economically sustainable outcomes and described disease diagnostic tests which have been/are being developed in the Netherlands. Dr. Grogan provided an update on Virus X and reviewed diagnostic options for its detection. Professor Romaine reviewed the principles and practices associated with *Trichoderma* green mould control and Dr Meyer described the development and use of a DNA detection test for wet bubble disease (*Mycogone perniciosa*).

Aims of the project:

Early warning system for disease:

Polymerase chain reaction (PCR) technologies can be used to detect nuclear material which is specific to particular mushroom diseases. PCR testing provides a 'present' or 'absent' result.

The innovative aspect of disease detection being researched in this project is quantification of the nuclear material (qPCR) and, hence, an indication of the severity of disease which might develop.

Correlation of the amount of detected (qPCR) to the risk of disease developing:

Epidemiological studies at the Marsh Lawson Mushroom Research Unit will determine the effects on mushroom growth, yield and quality resulting from different quantities of disease nuclear material detected with qPCR.

Appropriate management strategies to reduce losses

Based on the outcome from the epidemiological studies, strategies will be developed to enable growers to manage different levels of risk.

Further details:

More information about the research project and material presented at the workshop can be obtained from Greg Seymour, General Manager, Australian Mushroom Growers Association, email <seymour@amga.asn.au>.

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[FIRST AFRICA CONFERENCE ON EDIBLE AND MEDICINAL MUSHROOMS \(25th – 29th October 2006\)](#)

Scholarships were awarded to students to attend this conference and here are two reports.

Opige Michael

Participants

It was quite an experience to meet great and inspiring scientists from across the world, notably professor S. T. Chang. Presentations from different countries and on different topics were made and this included from Australia, USA, Netherlands, Belgium, Japan and France. Other countries present were Namibia, Kenya, Tanzania, Uganda, Ghana, and Democratic Republic of Congo.

Key expectations

- Knowledge on edible and medicinal mushrooms
- Make a presentation before great and renowned scientists
- Produce publishable papers for the workshop proceedings

Organizers of the conference

- Faculty of Veterinary Medicine (Makerere University)
- Faculty of Science (Makerere University)
- NAPRECA - Uganda
- I recognize ISMS for sponsoring my attendance

Titles of the papers I presented

- Comparative chemical composition of two indigenous edible mushrooms from the Teso region of Uganda (*Termitomyces microcarpus* [Eswei] and *Termitomyces giganteus* [Imaruk])
- Antibacterial activity of extracts of selected Edible and Medicinal Mushrooms of Teso Region, Kumi District (Uganda)

Experiences and lessons learnt

It is always an exciting experience to be in any event especially if it's the first of its kind. I am glad I got the chance of not only attending but actively participating in the first Africa conference on Edible and Medicinal mushrooms. This was made possible by International Society for Mushroom Sciences (ISMS) for which am very grateful. As I have mentioned before, I got the opportunity to meet and share knowledge with great scientists with specialization in mushroom sciences. This was one of the achievements long awaited for. If that is big enough, how about the excitement of making a first ever scientific paper presentation before eminent scientists? To me, this was the climax of my experience.

As a student with a vision of learning more and in depth, I found that all the presentations made were interesting. My favourite being a research on *Cordyceps* by Dr. John Holliday of Alloha Medicinals from United States of America and of course my own presentations. I learnt a lot from making a presentation. The topics ranged from mushroom cultivation, nutritional profiles, medicinal values and the contribution mushrooms can have in the building of economy, etc.

No doubt I have benefited from the exposure and the opportunity has contributed immensely to the development of my professional career. At the end of this, I shall have two papers published with publishing journals and as proceedings of the conference.

Thank you so much.

Ajok Annet

I would like to take this opportunity to thank ISMS for the scholarship so that I was able to attend the First African Mushroom conference. My experience at the conference was really awesome.

I benefited greatly from the different presentations and also exposure to many scientists and the farmers. I met great scientists like Professor S.T. Chang ("Father of mushrooms"), Professor Nakaya and many more. I had only read their published literature before.

This conference has greatly increased on my knowledge of mushroom biology and biotechnology. I would love to contribute to the mushroom Industry.

Thank you once again.

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RUSSIAN MUSHROOM INDUSTRY

by Alexander Khrenov

Year	Agaricus	Pleurotus	Shiitake	TOTAL
1995	3179	200	NA	3379
2000	6792	1240	NA	8032
2001	7300	1800	NA	9100
2002	7110	2237	NA	9347
2003	7189	2300	24	9513
2004	6931	2582	84	9597
2005	7887	3226	38	11,151
2006	10,600	3600	15	14,215

Table 1 - Mushroom production in Russia, 1995 - 2006 (tonnes)

The Russian mushroom industry is very small for such a large country, with only 14,215 tonnes being grown in 2006 (Table 2). While production has increased in recent years (Table 1), the amount is insignificant considering the Russian population of 142 million. Even when imported mushrooms (Tables 3 & 4) are included, the total availability of cultivated mushrooms cannot satisfy the rapidly growing demand in Russia. The total availability in 2006 was 124,815 tonnes.

Traditionally, Russian people eat a lot of wild mushrooms. Many parts of the country are heavily wooded and, every July, August, September and October, adults and children visit forests to collect wild mushrooms. People from country areas collect as many mushrooms as possible. Some are sold fresh and the remainder marinated or dried for storage and use during the rest of the year. People from towns and cities also go out into the forests at weekends to collect mushrooms. It is estimated that each Russian eats about 8 kg. of wild mushrooms per year.

As the quality of life has risen in Russia over the last 5 years, the people have become more conscious of issues which affect their health. At the same time, ecological and environmental conditions around big cities have made it more risky to pick mushrooms from the wild. Consequently, more and more people from the big cities now prefer to buy cultivated mushrooms.

Mushroom type	Production (tonnes)	Number of Farms
Agaricus	10,600	52
Pleurotus	3600	100
Shiitake	15	4
TOTAL	14,215	156

Table 2 - Mushroom production in Russia, 2006

The average consumption of cultivated

mushrooms in 2006 was only about 0.9 kg per person. This figure was limited by the low level of local production and also by the small quantity of fresh imports. High custom duties and transport costs are the major limitations to imports. Meanwhile, local production has been limited by lack of investment in the industry.

There are only 52 *Agaricus* farms in Russia, with six of them growing about 50 % of the total production. These major farms each have about 10,000 square metres of cropping surface, using mainly Dutch shelf growing systems. Five of the six large farms make their own compost and prepare their own casing material. Three farms use a bunker system for composting, while the other two use a conventional stacking and turning system. There is only one commercial company in Russia which makes compost for sale. This farm presently produces about 1400 tonnes of Phase II compost per month. This is sold in blocks to growers all over the country, situated from Viborg on the Finnish border to Habarovsk close to the border with China. The average yield of *Agaricus* mushrooms is 20 kg per square metre. Growers who are able to pick more than 22 kg per square metre can earn \$US 0.6 – 1.2 per kilogram depending on where the product is sold.

Year	2002	2003	2004	2005	2006
Product					
Fresh	14,679	20,059	24,183	25,387	28,600
Processed	28,083	31,967	51,655	74,233	82,000
TOTAL	42,762	52,026	75,838	99,620	110,600

Table 3 - Mushroom imports into Russia, 2002 - 2006 (tonnes)

Mushroom Product	Amount (tonnes)
Fresh	28,600
Blanched	58,400
Pickled and Frozen	18,300
Dried	4,380
Other	920
Total	110,000

Table 4 - Categories of mushroom imports into Russia, 2006

Pleurotus mushrooms have become increasingly popular in Russia because they have a stronger taste than *Agaricus*. However, consumption is restricted through lack of consistent supplies of quality product. There are about 100 *Pleurotus* growers in Russia. Four of them produce 50 % of the total production. Ninety-five percent (95%) of farms make their own substrate. Five different technologies are used to produce *Pleurotus* substrate but only tunnel systems provide consistent quality product. Only 30% of Russian *Pleurotus* are grown on substrate produced in tunnels. Straw is the main ingredient for the substrate but sunflower seed hulls are also used a lot, especially by small growers. *Pleurotus* production is limited by a lack of good quality substrate and difficulties with maintaining consistent climatic conditions in the growing rooms.

With improving business conditions in Russia, there are good opportunities for development of the mushroom industry. Already, investments are being attracted from successful agricultural and food business companies.



Pre-packs of *Agaricus* and *Pleurotus* in a retail display



An *Agaricus* crop growing in blocks



Pleurotus production in hanging bags

Author details :

Alexander Khrenov is General Director of the company SG – 2000 which operates the Mushroom Growing School in Russia. The School was established 15 years ago by Alexander and his partners and organizes information for people wishing to set up mushroom growing businesses. In addition, the School publishes a Journal and organizes International Mushroom conferences and exhibitions.

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PAUL J WUEST, 1937-2006

On September 5, 2006 a good friend to the mushroom farm community and great scientist-educator lost a heroic battle against a disease that might have crippled his body but never conquered his spirit and creative sense of humor. Since 1964, Paul J. Wuest dedicated his life to the mushroom community as a mushroom extension specialist and researcher and became world known for his candor and practical approach to the challenges of the commercial cultivation of mushrooms.

Paul J. Wuest was born on February 26, 1937 in Philadelphia to the late Frank C. and Catherine R. McLaughlin Wuest. He completed high school in 1954 and earned a bachelor degree in Horticulture in 1958 and a Ph.D. in Plant Pathology from Penn State in 1963 under the direction of Dr. Jim Bloom. He joined the U.S. Army Combat Engineer and Chemical Corps as 2nd Lt.

(1958) and promoted to Capt. (1963) stationed at U.S. Army Biological Lab in Frederick, MD and was honorably discharged in 1968. He became a research professor and extension specialist in the Department of Plant Pathology in 1964, assigned to work on all aspects of commercial mushroom cultivation.

His responsibilities at Penn State included organizing and teaching graduate and undergraduate courses in plant pathology, plant disease control and integrated pest management. He guided the research of many graduate students pursuing advance degrees. Dr. Wuest planned, organized, financed, conducted, analyzed and reported on research concerning the horticultural and disease aspects of mushroom farming in Pennsylvania, United States and Internationally. His extension program identified the needs of the mushroom farmers, mushroom farming and the mushroom farm community and he planned, organized and conducted a comprehensive educational program to address these needs.

At Penn State, Dr. Wuest worked closely with the mushroom growers to facilitate successful introduction of innovations into the industry. He had the ability to discuss research on a level that all farmers could understand. Novice as well as experienced farmers could relate to his personal style and sense of humor. He was always positive and brought a common sense approach to growing and sometimes had to let the growers know the problems might be from their own doing.

During his career, Dr. Wuest had over 30 refereed papers on such topics as tobacco blue mold, mushroom pests and diseases, their control and management, integrated pest management, pesticides, processing, general production, economics and spent mushroom substrate. His research contributions include thermal sensitivity of fungal pathogens of *Agaricus bisporus*, etiology of *Verticillium malthousei*, bacterial blotch disease and spawn temperature on the influence of LaFrance, a viral disease of mushrooms. He was a leader in bringing Integrated Pest Management (IPM) to the mushroom community. Dr. Wuest managed and directed a highly successful IPM program that is currently used in Europe, Ocean Asia and the Americas.

He had over 100 extension and trade publications on all aspects of mushroom cultivation, 31 abstracts to professional meetings, slide and tape sets, several videos, and 3 books. His book, The Penn State Handbook for Commercial Mushroom Growers continues to a popular standard reference for growers all over the world. He had the insight to publish a handbook on durable paper that wouldn't be damaged in a farm environment. This handbook provided general information in terms growers could relate to and yet provide enough details, including color photos and drawings on pest and diseases that it helped growers identify their problems. Dr. Wuest developed a best management practice manual that provided a methodology for the farm community to operate without detracting from the environment. His overall extension program has aided in establishing another generation of successful mushroom farmers to carry on this Pennsylvania tradition.

Because he worked hand-in-hand with growers, he often anticipated the next problem. He organized the 1st International Spent Mushroom Substrate (SMS) Symposium in Philadelphia in 1994 because he had anticipated one of the next issues confronting mushroom growers would be the disposal of SMS. The 2nd SMS Symposium, held this past September, was dedicated to Dr. Wuest. The mushroom community continues to build on his legacy.

Dr. Wuest lectured worldwide on many different topics of mushroom cultivation. He was invited to speak to universities in England, Germany, South Africa and Canada. Organization such as The International Society of Mushroom Science, North American Mushroom conference, American Phytopathological Society, the Entomological Society of America, South African Mushroom Farmers Association, American Mushroom Institute and Canadian Mushroom Growers Association all invited Dr. Wuest to lecture at one or more of their events.

He was a lifetime member of the International Society of Mushroom Science and served on the executive committee for many years. Dr. Wuest was also a member of the American Mushroom Institute where he served as an editor for their trade journal and was on several committees. He was also a member of the Canadian Mushroom Growers Association and was invited to participate in several of their annual meetings. He was a post-doctoral fellow for the Canadian Research Council.

His international consulting focused on mushroom farming and technical agriculture and from 1967 he worked at locations in North America including Alberta, British Columbia, California, Idaho, Michigan, New York, Ohio, Ontario, Oregon, Pennsylvania, Quebec, Tennessee, Texas, and Virginia. Internationally he worked in Egypt, England, Germany, India, Mexico, Peru, Saudi Arabia, Trinidad, and Venezuela.

He retired from the department in 1999 as a Professor Emeritus, only because his physical health prevented him from continuing at the commitment level he was accustomed too. Rheumatoid arthritis had made it impossible for Paul to physically continue, although his mind was still sharp. Even after his retirement he continued to provide intellectual guidance to many growers, students and colleagues. His enjoyment of music was life-long. He was a member and ex-president of the State College Choral Society and served on the Borough Shade Tree Commission.

He was loved and admired by many in the mushroom community. He was thoughtful, dedicated, caring and respected scientist and educator. Many of his students have gone on to become successful mushroom community members and scientists and others are successful scientists in other fields. He will be remembered for his sense of humor and positive outlook on life. Even as he was physically failing, he never complained, never showed any frustration, and never gave up. He has been an inspiration and source of strength to many farmers, students, scientists and family members. He will be missed, but Paul Wuest and his commitment to the mushroom community will never be forgotten.

In addition to his wife, Jan he is survived by four children, Paula M. Plageman and her husband, Joseph, of Temple, Greta A. Dierker, of Downingtown, Philip J. Wuest and his wife, Krista, of Vancouver, Wash., and Rebecca T. Krantweiss and her husband, Jeffrey, of State College; a brother, Frank J. Wuest, of Leavenworth, Kan.; and nine grandchildren.

Prepared by David Beyer

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COMING EVENTS

2007

February 8-10: Fruit Logistica, Berlin, Germany

February 18-20: 19th NAMC, Sheraton San Diego Hotel & Marina. <www.americanmushroom.org>

August 26-29: 5th International Workshop of Edible Mycorrhizal Mushroom, Chuxiong, Yunnan Province, China. <www.iwemm5.com>.

September 23-27th: 4th International Medicinal Mushroom Conference, Ljubljana, Slovenia.

November: 1st International Symposium of Edible and Medicinal Mushrooms and 2nd Meeting in the Biology of Edible and Medicinal Mushrooms, Bahia Blanca, Argentina.

2008

May 21-24: 17th International Congress on the Science and Cultivation of Edible and Medicinal Fungi, Cape Town, S. Africa. <www.mushroominfo.co.za>

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17th International Conference of the
ISMS International Society
for Mushroom Science
Cape Town 2008
South Africa

CALL FOR PAPERS

The home of picturesque wine farms, glorious beaches, sunshine, safari & Madiba!!

And Now.... The 17th ISMS International Conference.

Date: Wednesday 21 to Saturday 24 May 2008

Venue: Cape Town International Convention Centre



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Fifth International Workshop on Edible Ectomycorrhizal Mushrooms

Welcome

The Organizing Committee invites you to attend the Fifth International Workshop on Edible Ectomycorrhizal Mushrooms (IWEMM5, www.iwemm5.com) to be held in Chuxiong, Yunnan, China from 26 to 29th August 2007.

All aspects of the science of edible ectomycorrhizal mushrooms will be covered in the workshop. Considerable time will also be devoted to the trade and cultivation of EEMM which we anticipate will be of benefit to the economic development of the region.

Chuxiong City is the capital of Chuxiong Yi Nationality Autonomous Prefecture, the home of the Yi people. This small city of 300,000 people is located in the centre of Yunnan Province. It is one of the province's most important producers and trader of edible mycorrhizal mushrooms. The equitable climate, fine services and facilities, excellent environment and the warm hearted Yi people with their rich culture will create a good atmosphere for the meeting.

The end of August is the mushroom season. Hundreds of edible ectomycorrhizal mushrooms including matsutake and porcini will be fruiting in the local forests and on sale in the local markets. The City has an old quarter with traditional architecture. There is also a National Museum and the Square of Ten month Yi Solar Calendar and a Yi ancient town you can visit during the meeting. Nearby there are the Nanhua wild edible mushroom market, the hometown of the famous Lufeng Dinosaurs, the old Black Well town and Zixishan National Forest Park that can be visited during or after the meeting. Post conference field trips are being organized to see the unique flora, fauna, scenery and local cultures of Yunnan. The Organizing Committee would like to thank The Fourth International Workshop of Edible Mycorrhizal Mushrooms in Murcia, Spain, 28th Nov. to 2nd Dec. 2006 for making the decision that the IWEMM5 will be held in Chuxiong in 2007. Special thanks go to the People's Government of Chuxiong Yi Nationality Autonomous Prefecture and other organizations providing support for the Workshop. Our thanks also go to the sponsors for their support and to Dr Mario Honrubia, Dr Koji Iwaze, Dr Ian Hall, Professor ST Chang and others for their support during the organization of the Workshop.

We are sure that this Workshop will be enjoyable and memorable for everyone!

Wang Yun
Chairman of the Organizing Committee

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2006 ANNUAL REPORT

Welcome to the Society's 2006 Annual Report. The Executive Committee (Exco) comprised of: Secretary, Martmari van Greuning; Treasurer, Anton Sonnenberg, Vice President, Mr Gu Erxiong (Mr Li Shuping); and Immediate Past President, Mark Wach met twice during the year. Some Council and general members attended the May face-to-face Exco meeting held in Den Bosch during Mushroom Days.

2006 was a satisfactory year for the Society with just about everything running according to plan. Corporate membership increased and the general operations and management of the organization worked smoothly. Scholarship sponsorship of conferences increased and international co-operation occurred on several projects. The only disappointment was the delay in digitising the ISMS library. We hope to have that in hand shortly.

During the year, our Vice-President, Mr Gu Erxiong, was appointed by the Chinese Government to develop and implement an emergency service capability across China (no mean task I can assure you). Consequently, Mr Gu has had to relinquish his role as head of the Chinese Edible Fungi Association (CEFA) and Vice President of ISMS. Mr Li Shuping has taken over from Mr Gu at CEFA (and as the Manager of the ISMS Beijing office). Mr Li has also kindly agreed to take on Mr Gu's responsibilities as Vice-President.

The organization's financial position is sound and we are well placed to invest in value-added services for our members over the coming years. The ISMS library was successfully relocated to Wageningen University under the watchful eye of Dr Anton Sonnenberg.

A big vote of thanks goes to Tony and Frances Biggs who published our Mushrooms International Newsletter during the year. The February 2007 edition of MI will be their last so I'd love to hear from anyone who would like to be considered to take on the job and provide a more permanent editorial home for communication flagship (see notice elsewhere in the newsletter re editor's

role). The system for sending the newsletter out via email is working well with 60% of membership receiving it in electronic format.

The organization of the 2008 Congress in Cape Town South Africa is progressing smoothly and should be a not-to-be-missed event. An expression-of-interest was received from the Chinese Edible Fungi Association and the Chinese Academy of Agricultural Sciences to hold the 2012 ISMS Congress in Beijing.

A more detailed report on a couple of key areas is provided below

Agaritine Response Committee

The issue of agaritine content in *Agaicus* spp mushroom re-emerged during the year. Exco established a response committee to review the latest research/publications and media reports on the matter and to publish a summary paper to be distributed to members. This committee demonstrated the value of ISMS to its membership, particularly the corporate members, by quickly being able to assemble a group of appropriately experienced scientists to deal with issue. Second International Cooking Competition.

ISMS was again a co-sponsor of this popular event which was held in Beijing this year. The 2006 event was a great success with over 120 chefs from 16 countries participating in the competition. Over 30 media representatives attended which provided excellent publicity for the competition, particularly on national television on CCTV2. The event was held over two days with the final award ceremony held in The Great Hall of the People in Beijing. Representatives from a number of leading Chinese societies, including the World Chinese Cuisine Society attended the ceremony and presented awards to the winners. The event provided an opportunity to promote both the domestic and international mushroom industries. Plans are already underway for the 2007 event and Mr Gu sought assistance from ISMS to encourage even greater participation.

2008 Congress - Capetown South Africa

The South African Organizing Committee reported that everything is going according to plan for the 2008 Congress. Block accommodation bookings have been made; first and second call for papers being sent out. Registration forms will be available as soon budgetary issues are finalised. Piet Lempen will be visiting South Africa early in the New Year to assist in the co-ordination of the exhibitions. An editor has been appointed to undertake the editing of the conference proceedings. Proceedings will be published on CD. Early in the new-year will see the commencement of the identification and appointment of the keynote speakers.

Conference Scholarships

Spent Mushroom Substrate (SMS) Symposium, Philadelphia USA. The American Mushroom Institute, Penn State University, and ISMS co-sponsored a highly successful Second International SMS Symposium held in September. ISMS provided funds for scholarships for delegates/speakers chosen by the organising committee. The symposium formally passed a resolution that the term Spent Mushroom Substrate (SMS) be replaced by Mushroom Compost. Exco accepted the recommendation from the organizing committee.

First Africa Mushroom Conference, Uganda. ISMS provided funds for scholarships for delegates to attend the first Africa Mushroom Conference in October. Some excellent feedback was received from scholarship winners and the conference itself was deemed to be an outstanding success.

In Conclusion

On behalf of members, and especially from me, a big thanks to the other members of our Executive Committee for their outstanding efforts in helping to run ISMS during another busy year. The contribution of their valuable personal time, intellect and experience to our organization, is greatly appreciated. I would also like to place on record the Society's appreciation to their respective employers for the support they have provided Exco throughout the year.

Greg Seymour
President
January 2007

2006 ISMS FINANCIAL REPORT

Summary of Accounts Income

2006	Item	2005
€10,321.35	Corporate Membership	€ 8,841.87
€ 9,285.89	Other Memberships	€ 1398.78
€28,807.24	Total Memberships	€10,240.63
Nil	Other Income	Nil
€28,807.24	TOTAL INCOME	€10,240.63

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Expenses

2006	Item	2005
€1,079.95	Bank Costs	€74.97
€563.38	Newsletter SA	€991.03
€1,968.66	Newsletter Aust (UK)	€2,927.05
€475.00	ISMS Costs	€564.00
€148.69	Administration Costs	€76.56
€5,512.76	Sponsorships	€2,050
€483.57	Refunds	Nil
Nil	Other	Nil
€10,232.01	TOTAL EXPENSES	€6,683.61

2006 Surplus (Deficit)

Income	€28,607.24 –
Expenses	€10,232.01
	€18,375.23

Balance

Balance 30-12-2005 (Rabo Bank account)	€ 27,485.00
Income	€ 28,607.24
Expenses	€ 10,232.01
Balance 30-12-2006 (Rabo Bank account)	€ 45,860.23


Audit Report

"The undersigned, F.H.M. Albers, Controller of the Dept. of Finance and Control of the Plant Science Group (WUR) declares the correctness of the financial report made up by Dr A.S.M. Sonnenberg.

Wageningen, Februari 7, 2007"

Dr Anton Sonnenberg
ISMS Treasurer
January 2007

The undersigned, F.H.M. Albers, controller of the dept. Finance and Control of the Plant Sciences Group (WUR) declares the correctness of the financial report made up by Dr. A.S.M. Sonnenberg
Wageningen, February 5, 2007



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2007 ISMS ANNUAL OPERATING PLAN & BUDGET

Income - € 26,000

Membership Fees – Budget € 26,000

ISMS derives its income from its annual membership fees. A breakdown of the 2007 budgeted income for each membership category is shown in Table 1. Corporate membership fees make up the major source of income. Gaining additional corporate members and expanding Associate member numbers will be a part of our 2007 membership initiatives.

Table 1: 2007 Budgeted Income by Membership Category

Membership Category	Income Budget (€)	% M'shp
Corporate	20,800	80.0%
Individual	4,300	16.5%
Student	60	0.2%
Associate	90	0.3%
Group	750	3.0%
Life	0	0
Honorary	0	0
Total	26,000	100

Table 2: Schedule of ISMS Membership Fees (updated 2006)

Membership Category	Annual Fee (€)
Corporate	
Ann. Prod'n ('000 t/pa)	
0-10	250
10-20	500
20-40	750
40-60	1000
60-80	1250
80-100	1500
100-150	1900
150-200	2300
200-300	2700
> 300	3000
Individual	50
Associate	50 or 7.5/member
Student	15
Group	7.5 /member

Table 3: 2007 Corporate Membership Fee Budget

Corporate Member	Prod'n	€
Australia		1000
Belgium		750
Canada		1500
China		3000
Denmark		250
France		1900
Germany		1250
Ireland		250
Netherlands		2700
New Zealand		250
Poland		2300
South Africa		750
Spain		1900
UK		Nil
USA		3000
Total Corp M'shp		20800

Table 4: 2007 Budgeted Expenditure by Item.

Budget Item	€
Newsletter	
Editor	3000
Printing	1000
Postage	500
Website	
Article scanning	4500

Freight	500
Miscellaneous	500
Working Groups	
PVR - venue expenses	2500
Health Halo – venue exp.	2500
Exco Meetings	
Venue expenses	1000
Telephone	300
Affiliations	400
Scholarships	9000
Admin	500
TOTAL	26,200

Expenditure - € 26, 000

Newsletter – Budget € 4,500

Newsletter costs have been reduced since 2005 due to electronic formatting and delivery, reduced printing and postage costs. 2007 costs are expected to be even lower. Editorial costs will be higher than 2006 as we will need to find a new newsletter editor during the year.

Website – Budget € 5,500

The MushWorld deal means there is no cost for developing, maintaining, and hosting the new ISMS website. €4,500 has been allocated to scan the archive material for uploading on the website. € 1 000 has been allocated to package and transport the archives for scanning and formatting etc.

Working Groups – Budget € 5,000

€ 2 500 has been allocated for meeting costs (venue and catering etc) associated with a proposed ISMS working group to be convened to establish protocols for international IP protection of mushroom strains. Participants or their organizations will cover travel costs.

Exco Meetings – Budget € 1,300

€ 1 300 has been allocated to pay for meeting expenses (venue, catering etc) associated with an Exco meeting in Europe and the teleconferences held throughout the year.

Affiliations – Budget € 400

€ 35 has been allocated to pay for ISMS membership of the International Mycological Society and € 150 has been allocated to maintain membership of the Dutch Chamber of Commerce to facilitate the ISMS corporate registration in the Netherlands. Other affiliations may be required.

Scholarships – Budget € 9000

€ 9000 has been allocated to provide support for students to attend conferences related to mushroom science. A general mushroom conference in South America and a third Medicinal Mushroom Conference in Slovenia are scheduled for 2007 although no formal requests have been received for financial support.

Admin Fees – Budget € 500

ISMS is attempting to reduce admin costs by implementing electronic communication with members and electronic financial transaction. Members are being encouraged to pay their membership fees by electronic deposit in Euros rather than by cheque in a foreign currency.

Credit card facilities have been made available via AMGA for ISMS payments but fees are still substantial. Individual membership fees have been increased by € 5 this year to try to the impact of banking fees on income.

Greg Seymour
President
December 2006

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PAYMENT OF FEES

Membership fees can be paid now by electronic bank transfer to the following account

IBAN: NL28RABO0109770862

BIC: RABONL2U

Address: Schouwburgplein 13, 5801BV Venray, The Netherlands

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