MUSHROOMS AND HEALTH GLOBAL INITIATIVE BULLETIN

An ISMS Global Initiative

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News from the initiative - Mary Jo Feeney

▶ New format

We hope you enjoy the *Bulletin's* new look created by Elise Rackley, Response Pty Ltd, a leading design group in Australia.

▶ SCG members

Welcome Raymond van Buuren (Netherlands) and Elizabeth O'Neil (Canada).

The Mushrooms and Health Global Initiative (Initiative) welcomes Raymond van Buuren (Netherlands) and Elizabeth O'Neil (Canada) to the Strategic Communications Group (SCG). The complete list of members of this important group, including how they support the work of the Initiative, is found at the end of the *Bulletin*.

▶ New MHGI website

Look for a dedicated Mushrooms and Health Global Initiative (MHGI) website launched early in 2010. **Although there are other mushroom industry and organization websites, the MHGI website is a direct benefit to Initiative investors and focuses on communicating the nutrition and health benefits of mushrooms.**

Mushrooms and Health 2008 (the Initiative's Crown Jewel), a critical review of the science linking mushrooms and health prepared by leading researchers at CSIRO (Commonwealth Scientific and Industrial Research Organization, Food Science Australia http://www.foodscience.csiro.au), will be the website's main focus. Initiative Team members Cardwell, Collier and Feeney have written background information for the various topics and sections of the report to help put the technical information in perspective. The website will link to current and past *Bulletins*; post breaking news on conference presentations and reports; post or link to newly published mushroom research and media alerts; and link to other mushroom organization websites. Send your suggestions for additional content for the MHGI website, to info@mushroomsandhealth.com.

▶ Member information sharing

As a service to *Bulletin* readers and without endorsing any particular statement, study, product or other resource, the Initiative encourages sharing of information. William Ahern, Mycology Research Inc, has provided a link to the *Clinical Journal of Mycology*, formerly *Mycology News*: http://www.mycologyresearch.com/pdf/newsletter/Clinical_Journal_of_Mycology_Vol2_July2009.pdf.

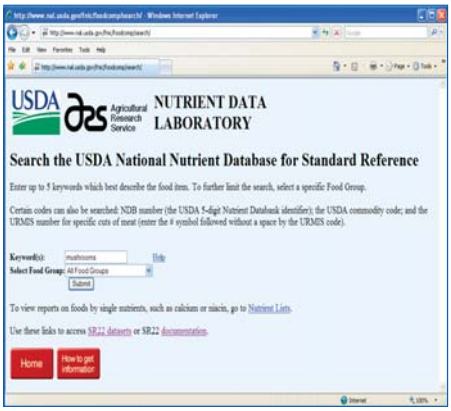
Vitamin D research of interest

▶ Vitamin D values for mushrooms in USDA database for Standard Reference

Mushrooms contain ergosterol, a precursor to vitamin D2. Exposure to ultraviolet light (UV) from the sun or by commercial methods converts ergosterol to D2. To provide vitamin D data for the United States Department of Agriculture (USDA) National Nutrient Database for Standard Reference (SR) the U. S. Mushroom Council in cooperation with the USDA's Nutrient Data Laboratory, funded a study to analyze white, portabella (including commercially UV exposed available at retail), maitake, enoki, shiitake, oyster, crimini, morel, and chanterelle mushrooms.

Consumers begin to associate mushrooms with this important nutrient.

The USDA database is the major source of food composition data and provides the foundation for most food composition databases in the public and private sectors. This analytical data enables the industry to communicate mushrooms' vitamin D content so that health influencers and consumers alike begin to associate mushrooms with this important nutrient and include them regularly in their food choices. Visit http://www.nal.usda.gov/fnic/foodcomp/search/. From the Home Page, click on "Search" then enter "mushrooms" for the keyword search.



In addition, the U.S. National Institutes of Health, Office of Dietary Supplements "Dietary Supplement Fact Sheet: Vitamin D" now lists mushrooms exposed to UV light as the top food source of vitamin D at about 400 IU per 84 g serving (fresh weight). http://dietary-supplements.info.nih.gov/factsheets/vitamind.asp.

▶ Vitamin D and risk of cardiovascular disease

Kilkkinen A, Knekt P, Aro A et al. "Vitamin D status and the risk of cardiovascular disease death." *American Journal of Epidemiology* 2009. 170(8):1032-1039. http://aje.oxfordjournals.org/cgi/content/abstract/170/8/1032. Correspondence to Dr. Annamari Kilkkinen, National Institute for Health and Welfare, P.O. Box 30,

FI-00271 Helsinki, Finland (e-mail: annamari.kilkkinen@thl.fi).

The abstract states that accumulating evidence suggests that inadequate vitamin D levels may predispose people to chronic diseases. The authors investigated whether serum 25-hydroxyvitamin D (25(OH) D) level predicts mortality from cardiovascular disease (CVD).

Based on the Mini-Finland Health Survey, the study included 6,219 men and women aged 30 years free from CVD at baseline (1978-1980). During follow-up through 2006, 640 coronary disease deaths and 293 cerebrovascular disease deaths were identified.

Levels of 25(OH) D were determined from serum collected at baseline. Cox's proportional hazards model was used to assess the association between 25(OH) D and risk of CVD death. After adjustment for potential confounders, the hazard ratio for total CVD death was 0.76 (95% confidence interval (95% CI): 0.60, 0.95) for the highest quintile of 25(OH) D level versus the lowest. The association was evident for cerebrovascular death (hazard ratio = 0.48, 95% CI: 0.31, 0.75) but not coronary death (hazard ratio = 0.91, 95% CI: 0.70, 1.18).

A low vitamin D level may be associated with higher risk of a fatal CVD event, particularly cerebrovascular death. These findings need to be replicated in other populations, and randomized controlled trials are required to demonstrate a causal link between vitamin D and CVD.

▶ Do children need more vitamin D?

Over 6 million American children are getting too little of this essential nutrient.

Mansbach JM, et al. "Serum 25-Hydroxyvitamin D levels among US children aged 1 to 11 years: Do children need more vitamin D?" *Pediatrics* 2009. Vol 124; 5: 1404-1410. http://pediatrics.aappublications.org/cgi/content/abstract/124/5/1404.

While the optimal amount of vitamin D is still subject to debate, a new study discovered that over 6 million American children are getting too little of this essential nutrient. Previous single-center studies have suggested that hypovitaminosis D is widespread. In this study, the researchers sought to determine the serum levels of 25-hydroxyvitamin D (25[OH] D) in a nationally representative sample of US children aged 1 to 11 years.

Data were obtained from the 2001-2006 National Health and Nutrition Examination Survey (NHANES). Serum 25(OH)D levels were determined by radioimmunoassay and categorized as <25, <50, and <75 nmol/L. National estimates were obtained by using assigned patient visit weights and reported with 95% confidence intervals (CIs).

During the 2001-2006 time period, the mean serum 25(OH)D level for US children aged 1 to 11 years was 68 nmol/L (95% CI: 66-70). Children aged 6 to 11 years had lower mean levels of 25(OH) D (66 nmol/L [95% CI: 64-68]) compared with children aged 1 to 5 years (70 nmol/L [95% CI: 68-73]).

Overall, the prevalence of levels at <25 nmol/L was 1% (95% CI: 0.7-1.4), <50 nmol/L was 18% (95% CI: 16-21), and <75 nmol/L was 69% (95% CI: 65-73). The prevalence of serum 25(OH)D levels of <75 nmol/L was higher among children aged 6 to 11 years (73%) compared with children aged 1 to 5 years (63%); girls (71%) compared with boys (67%); and non-Hispanic black (92%) and Hispanic (80%) children compared with non-Hispanic white children (59%).

The authors state that based on a nationally representative sample of US

children aged 1 to 11 years, millions of children may have suboptimal levels of 25(OH) D, especially non-Hispanic black and Hispanic children. More data in children are needed not only to understand better the health implications of specific serum levels of 25(OH) D but also to determine the appropriate vitamin D supplement requirements for children.

For more vitamin D research information, see the report by Glenn Cardwell on the AMGA Conference 2009.

Mushroom research

▶ Yamabushitake and cognitive impairment

Mori, K., Inatomi, S., et al. "Improving effects of the mushroom Yamabushitake *(Hericium erinaceus)* on mild cognitive impairment: a double-blind placebo-controlled clinical trial." *Phytotherapy Research* 2009; 23: 367-372. email: Koichiro Mori (morikou@mail2.pharm.tohoku.ac.jp).

This double-blind, parallel-group, placebo-controlled trial was performed on 50- to 80-year-old Japanese men and women diagnosed with mild cognitive impairment in order to examine the efficacy of oral administration of Yamabushitake *(Hericium erinaceus)*, an edible mushroom, for improving cognitive impairment, using a cognitive function scale based on the Revised Hasegawa Dementia Scale (HDS-R).

According to the abstract, after 2 weeks of preliminary examination, 30 subjects were randomized into two 15-person groups, one of which was given Yamabushitake and the other given a placebo. The subjects of the Yamabushitake group took four 250 mg tablets containing 96% of Yamabushitake dry powder three times a day for 16 weeks. After termination of the intake, the subjects were observed for the next 4 weeks.

At weeks 8, 12 and 16 of the trial, the Yamabushitake group showed significantly increased scores on the cognitive function scale.

At weeks 8, 12 and 16 of the trial, the Yamabushitake group showed significantly increased scores on the cognitive function scale compared with the placebo group. The Yamabushitake group's scores increased with the duration of intake, but at week 4 after the termination of the 16 weeks intake, the scores decreased significantly. Laboratory tests showed no adverse effect of Yamabushitake. According to the authors, the results obtained in this study suggest that Yamabushitake is effective in improving mild cognitive impairment.

▶ Maitake and bladder cancer cells

Rajamahanty LB, Won S et al. "Synergistic potentiation of interferon activity with maitake mushroom d-fraction on bladder cancer cells." *BJU International* 2009, Sept. http://www.ncbi.nlm.nih.gov/pubmed/19735256.

The objective of this study was to examine whether the combination of interferon (IFN)-alpha and maitake mushroom D-fraction (PDF), a bioactive mushroom extract, might potentiate the anticancer activity of IFN-alpha in bladder cancer T24 cells in vitro.

Effects of recombinant IFN-alpha(2b) (0-50 000 IU/mL), PDF (0-700 microg/mL), or their combinations were assessed on T24 cell growth at 72 h. Cell cycle analysis and assays for double-stranded DNA-dependent protein kinase (DNA-PK) were performed to explore possible antiproliferative mechanism of these agents.

According to the results, IFN-alpha(2b) was able to induce a significant (approximately 50%) growth reduction at 20 000 IU/mL, which further

declined to approximately 66% at 50 000 IU/mL. PDF had no effects up to 200 microg/mL, but there was an approximately 20% and approximately 53% growth reduction at 400 and 700 microg/mL, respectively. When the varying concentrations of IFN-alpha(2b) and PDF were combined, 10 000 IU/mL of IFN-alpha(2b) combined with 200 microg/mL of PDF resulted in an approximately 75% growth reduction. This was accompanied by a G(1) cell cycle arrest, shown by cell cycle analysis. Concurrently, DNA-PK activity in IFN-alpha(2b)/PDF-treated cells was almost three-fold higher than controls.

The IFN-alpha(2b)/PDF combination could trigger DNA-PK activation that may act on the cell cycle to cease cancer cell growth.

According to the study, the combination of IFN-alpha(2b) (10 000 IU/mL) and PDF (200 microg/mL) reduced growth by approximately 75% in T24 cells. This appears to be due to a synergistic potentiation of these two agents, inducing a G(1) arrest with DNA-PK activation. Therefore, the IFN-alpha(2b)/PDF combination could trigger DNA-PK activation that may act on the cell cycle to cease cancer cell growth.

▶ Heavy metal accumulation

Campos, JA, Nejera NA and Sanchez CJ. "Substrate role in the accumulation of heavy metals in sporocarps of wild fungi. *BioMetals*, 2009; 22:835-http://www.springerlink.com/content/t02532824u882v57/.

The distribution of neodymium (Nd), lead (Pb), thorium (Th) and uranium (U) was investigated in about 100 samples of 12 different species of common, edible and non-edible mushrooms collected in unpolluted areas in the province of Ciudad Real, Central Spain.

The quantitative analysis of heavy metals was performed by X-ray fluorescence spectrometry (a simple, accurate and non-destructive method). The concentration of these elements was related to three factors: mushroom specie, life style/substrate and study area. The results reveal considerable amounts of the four metals in all species analyzed as well as significant differences on the capability to accumulate these elements.

The aim was to find out if there is a connection between the concentrations of specific heavy metals detected in the mushrooms, based on three factors: the type of substrate, the study area and the species of mushroom.

The maximum absorption of Nd and Pb was found in the ectomycorrhizal *Cantharellus cibarius*, reaching values of 7.10 and 4.86_g/g_1, respectively. Thorium and uranium were mainly accumulated (3.63 and 4.13_g/g_1, respectively) in *Hypholoma fasciculare* although it is an epiphyte species, isolated from the mineral particles of soil.

The distribution patterns of these metals in sporocarps of different habitats and locations showed no significant differences, except for thorium, mainly accumulated in mushrooms living on wood regarding these living on soil organic matter. The species-specific is therefore the determining factor for accumulation of Nd, Pb, Th and U, more than substrate, in this study.

According to a separate press release by the Spanish Foundation for Science and Technology (http://www.physorg.com/news176115997.html) "The aim was to find out if there is a connection between the concentrations of specific heavy metals detected in the mushrooms, based on three factors: the type of substrate, the study area and the species of mushroom. The third was the determining factor", explains Juan Antonio Campos, principal author of the study and researcher at the Department of Crop Production and Agricultural Technology at UCLM. The highest levels of neodymium (7.1 micrograms/gram) and lead (4.86 µg/g) were found in the chanterelle *(Cantharellus cibarius)*,

a mushroom widely used in European cuisine. This mushroom grows in the shadow of Holm oaks, Cork oaks and oaks, and is ectomycorrhizal (it clings to the external roots of plants to exchange nutrients); thereby it has direct contact with the mineral particles of the soil.

Mushroom research in the news

The media continues to cover Larry Cheskin, MD's past research on the lack of energy compensation over 4 days when white button mushrooms are substituted for beef.
Read what VIV - an online magazine - says about the research, mushroom nutrition and great tasting recipes provided by the U.S. Mushroom Council: http://www.zinio.com/pages/VIVmag/Nov-Dec-09/416103928/pg-66.

In Australia, Glenn Wheeler interviewed Dr. Cheskin on "The Good Life." The program is carried by 36 radio stations through the Macquaire Regional network, reaching about 310,000 listeners.

Dr. Cheskin currently is conducting a 1-year clinical trial to investigate the effectiveness of mushroom substitution for high energy density foods on weight loss, health measures, and effect of regular use of mushroom substituted meals on oxidative stress, inflammation, and immune function.

News from the Netherlands - Raymond Van Buuren

▶ Interactive platform about mushrooms for the public, partners and press

The Mushroom Promotion Foundation (MPF) is a marketing-communication oriented organisation founded by the mushroom sectors from Belgium, Germany, France, Netherlands and Spain. The MPF developed its European communication strategy around the central idea of proximity to consumers and interest groups like nutrition specialists, food industry, out of home and specialist and general press.

The MPF communication and promotion programming aims at a change of perception about mushrooms in the mind of consumers and 'influentials' - mushrooms need to upgrade in the food hierarchy, become more centre of plate and consequently more relevant in daily consumption habits. Communication will position mushrooms with the same connotations and qualities as vegetables but as the vegetable which has it all, can do it all.

The interactive platform with landing page www.champignon-id.com will become the first priority for consumer entrance with URLS in Belgium, Germany, France, Netherlands, Spain and UK in multi languages/cultures, and with recipes from various European kitchens. The website will be informing and inspiring; playful and surprising; inviting, sharing, thus stimulating dialogue between visitors. The website will include materials and information available for partners and press with log-in. Visitors will learn about mushroom growing process in the participating countries - growing practices that are safe, clean, conducted under quality control measures and are environmentally friendly.

The website will inspire with useful ideas for different moments of the day, season, occasion, culture, fast or slow; and motivate visitors, chefs, growers and the public - or even better they will also give suggestions, opinions, and share experiences.

Nutrition and health will be addressed with content pages and a database where publications and research reports will be made available with download options. The online platform will be launched by the end of 2009 along with online and off line advertising and public relations.

Monaghan Mushrooms first had the idea to put mushrooms in pink punnets to raise money for Breast Cancer Charities in 2008.

News from the United Kingdom - John Collier

▶ Monaghan Mushrooms raises money for ASDA Wal-Mart's Tickled Pink Campaign

With October being Breast Cancer Awareness Month, Monaghan Mushrooms wanted to raise money for ASDA Wal-Mart's Tickled Pink Charity in the UK and also raise awareness of the potential anti-cancer benefits of mushrooms.

Stephen Allen, Group Marketing Manager at Monaghan Mushrooms, stated "Monaghan Mushrooms first had the idea to put mushrooms in pink punnets to raise money for Breast Cancer Charities in 2008. We were delighted to be able to raise more than £20,000 (approximately 22,300 Euros; 36,400 AUD or 33,000 USD) and we were able to prove a commercially successful concept as mushrooms sales were up 56% during the period. In 2009 we were asked by ASDA to repeat the promotion but this time on a bigger across all suppliers scale raising even more money. Thanks to the work of charities like Tickled Pink more people than ever before in the UK are living well with breast cancer."

The pink punnet promotion was combined with media activity in the UK highlighting the immune boosting benefits of mushrooms.

▶ A synopsis of the EU Nutrition and Health Claim Legislation

Nutrition research often is conducted in order to support marketing messages, health claims and other public relations and promotional efforts. It is important to know your country's regulations regarding what can be claimed on labels and other forms of communications including websites. Initiative Team Member John Collier has summarized the regulations affecting European Union (EU) countries.

▶ Overview

EU regulation 1924/2006 on Nutrition and Health claims made on food was published on 18 January 2007. This first piece of scientific legislation to deal with nutrition and health claims aims to provide a higher level of consumer protection as well as harmonise legislation across the EU to facilitate trade between member states.

The regulation will control nutrition and health claims by means of positive lists of authorised claims that can be made on food together with the criteria a product must meet to use them. The Annex of the Regulation contains the list of permitted nutrition claims and the Regulation puts in place processes for the compilation of the list of authorised claims. EU regulations are directly applicable in Member States and this regulation will apply from 1 July 2007.

In order to make a nutrition or health claim now, or in the future, you must comply with the requirements of the new European Regulation (EC) No 1924/2006 on nutrition and health claims made on food. If you make, or plan to make claims, you should consult your Home Authority (FSA for the UK and FSAI for Ireland). http://www.fsai.ie/uploadedFiles/Cor_Reg1924_2006(1).pdf.

▶ Nutrient / Nutritional Composition Claims

Allowed nutritional claims in relation to vitamins, minerals, proteins, carbohydrates, etc will only be permitted if they are listed in the Annex and comply with the conditions set out in this Regulation. Here are some examples as listed in the Annex:

- "low in fat" - may only be made where the product contains no more than 3g of fat per 100g for solids or 1.5g of fat per 100ml for liquids.
- "source of fibre" - may only be made where the product contains at least 3g of fibre per 100g or at least 1.5g fibre per 100kcal.
- "sugar free" - may only be made where the product contains no more than 0.5g of sugars per 100g or 100ml.

Where similar products have similar levels of a nutrient a comparative claim can be made.

▶ Health Claims

Article 13.1a deals with health claims that describe or refer to the role of a nutrient or other substance in the growth, development and functions of the body based on generally accepted scientific evidence and well understood by the average consumer. **It is in Article 13.1a that any health claims for mushrooms have to be submitted.** In this Article the term 'approved health claims' refers to claims which will be included in the community register of approved claims which will be published by January 2010 at the latest. There are various transition periods but this article deals mainly with transition periods listed in Article 28.5 covering Article 13.1a claims.

After transitional periods set out in Article 28 of the Regulation have expired it will only be possible to make nutrition claims that appear in the Annex to the Regulation and health claims that appear in the lists of authorised claims to be contained in the Community Register which will be published by Jan 2010 at the latest.

When establishing nutrient profiles the European Commission will take into account the opinion of the European Food Safety Authority (EFSA) and will also put in place exemptions where these are considered necessary.

Article 4 of the Regulation also puts in place provisions that may restrict the use of claims on certain foods or categories of foods based on their nutritional composition (nutrient profile). Where a product is high in more than two nutrients, for example, fat and sugar, only reduced nutrition claims can be made. However if the product is high in just one nutrient, nutrition claims could be made on the condition that the product also highlights the high content of that nutrient, for example by saying "high fat content". However it will not be possible to make health claims where any nutrient does not meet the criteria set by the nutrient profile for that food.
When establishing nutrient profiles the European Commission will take into account the opinion of the European Food Safety Authority (EFSA) and will also put in place exemptions where these are considered necessary. Nutrient profiles will be fully established by the end of 2009. **In terms of mushrooms, nutrient profiles will not have a significant effect except for prepared mushroom products.**

Article 10 of the Regulation lists specific conditions including 'Health claims shall only be permitted if the following information is included in the labeling':

- a statement indicating the importance of a varied and balanced diet and healthy lifestyle

- the quantity of the food and pattern of consumption required to obtain the claimed beneficial effect

Also, it is important to note that non specific benefits of a food for overall good health or health related well-being may only be made if accompanied by a specific approved health claim.

In general, only health claims which are listed in the Community Register can be used on food and only if the product meets with any specific conditions of use as well as the general requirements of the Regulation. The Community Register is not yet in existence but will be published by Jan 2010 and national rules will continue to apply until claims are approved. During the transitional period, health claims may continue to be made until the Community Register has been published in Jan 2010 as long as the claims comply with the existing National legislation.

Health claims that are based on generally accepted scientific evidence and are well understood by the average consumer will not be required to go through the same approval process as claims which are based on new or emerging science.

▶ Claims based on generally accepted scientific evidence (Article 13.1a)

Health claims that are based on generally accepted scientific evidence and are well understood by the average consumer will not be required to go through the same approval process as claims which are based on new or emerging science or proprietary data, disease risk reduction claims or claims referring to children's development and health.

The Regulation allowed the Member States until 31 January 2008 to put together a list of health claims based on generally accepted scientific evidence. Once compiled it will be sent to EFSA for an opinion before a decision is made by the Commission and Member States on inclusion in the Community Register.

For further information on getting claims onto this list or how the UK's list will be compiled please see: www.food.gov.uk/foodlabelling/ull/claims. In Ireland details can be found at: http://www.fsai.ie/science_and_health/nutrition_and_health_claims.html.

News from Australia - Glenn Cardwell

▶ AMGA Conference October 2009

The Australian Mushroom Growers Association held its 36th annual conference at Surfers Paradise in Queensland. In particular, the presentations on vitamin D were of great interest to all growers and scientists present. Horticulturist Tony Biggs and AMGA General manager Greg Seymour gave a history of our knowledge of the vitamin D content of the mushroom. We have known of the vitamin D found in wild mushrooms since 1994, but didn't get to exploit this advantage until 2007 with research from Pennsylvania State University showing that light applied to commercial mushrooms dramatically boosted vitamin D2 levels.

▶ Vitamin D analysis in mushrooms

Previously, at the 2007 AMGA annual conference Dr David Beyer, Pennsylvania State University, provided some preliminary data on the vitamin D levels in mushrooms. That was the inspiration for the AMGA to begin a small trial in Dubbo, New South Wales at the end of 2007 to test the effect of UVC lights during the growing stage.

Since then, the Australian mushroom industry has collaborated with Warsash Scientific, makers of the Xenon pulsed light machine, and the University

mushrooms post harvest. Tony Biggs presented the data generated so far. Punnets of mushrooms of two sizes (35 mm and 50 mm diameter) were placed on a conveyor belt and passed under pulsed light, resulting in vitamin D2 levels at least 10 times greater than the 10 mcg (400 IU) recommended each day for adults under 70 years. Further studies will be conducted prior to Christmas to refine the process for commercial application.

Glenn Cardwell, Accredited Practising Dietitian with AMGA, reminded delegates that the mushroom resides in its own kingdom, explaining why it constantly throws up surprises, such as being a source of vitamin B12 and vitamin D2, two vitamins normally associated with foods of animal origin. The message of mushrooms uniqueness is being spread to health professionals and doctors during the year.

▶ Vitamin D insufficiency in Australia

Vitamin D has become of great interest to health researchers and medical authorities around the world.

Vitamin D has become of great interest to health researchers and medical authorities around the world. Vitamin D insufficiency is now linked to an increased risk of a range of health problems such as Multiple Sclerosis, diabetes, rheumatoid arthritis, high blood pressure, influenza, heart disease, bowel cancer, breast cancer, prostate cancer, ovarian cancer and depression.

Glenn stated that the mushroom has the potential to be the only food that can provide the vitamin D needs in a single serve, offering many health benefits to Australians. Currently, Australian adults get only around half their vitamin D needs through food such as oily fish, margarine and eggs.

Vitamin D insufficiency is prevalent in Australia. Local research shows that insufficiency is found in:

- 41% of people in south east Queensland
- 67% of Tasmanian women
- 70% of people living in hostels
- 73% of inpatients in a Melbourne hospital
- 76% of the elderly
- 80% of dark skinned and veiled women
- 83% of dermatologists in the winter

Why would a health professional group, dermatologists, have the lowest levels of vitamin D? Australians have been warned about the damaging effect of sunlight on skin and the subsequent threat of skin cancer. Dermatologists are likely to be avoiding sunlight to the detriment of their vitamin D levels.

News from the United States - Heidi Gengler

▶ Mushroom Council Goes "Pink" for Breast Cancer Awareness

The Mushroom Council (Council) participated in the American Dietetic Association's (ADA) annual Food and Nutrition Conference and Expo held in Denver, CO, October 17-20. This event provided a key opportunity to meet with and educate registered dietitians (RD) on the topic of mushrooms and health.

This year, the Council's booth went "pink" in support of National Breast Cancer Awareness Month and the City of Hope pink promotion already underway by participating growers. City of Hope, Duarte, CA, is a leading research, treatment and education institution for cancer and other life threatening diseases, and has pioneered numerous lifesaving procedures that have advanced cancer treatment worldwide. Dr. Shiuan Chen, City of Hope, is conducting breast and prostate cancer research supported by AMGA and the Council.

Attendees that stopped by the booth helped create a "Wall of Pink" by signing pink tills (containers) in support of cancer research and securing them to the booth wall. The Council provided additional funding to City of Hope for each attendee badge scanned. While 828 badges were scanned, it is estimated that more than 1,000 attendees (17 percent of professional attendees) stopped by the booth to see the wall or to pick up educational materials. Through this effort, the Council was able to leverage breast cancer research as an emotional connection to engage consumers and influencers and tout mushrooms unique direct tie to cancer research that is of interest to RDs. Click here to see a video of the "Wall of Pink," http://www.themushroomchannel.com/2009/10/26/a-fnce-ful-time-in-denver/.

It is estimated that more than 1,000 attendees stopped by the booth to see the wall or to pick up educational materials.

To drive additional traffic to the booth, two weeks prior to the event, an e-mail was distributed to 5,236 pre-registered attendees with information about how the Mushroom Council was providing additional funding ($.25/person) to City of Hope for each attendee badge scanned. Attendees were also asked to bring in a pink till (or a piece of one) to help build a "Wall of Pink" in support of breast cancer research. While the additional funding of breast cancer research was a draw to the booth, the Council also offered the chance to win one of three

US$100 American Express gift cards - a perk well-received by the attendees.

In addition to health professional outreach around Breast Cancer Awareness month, the Council also conducted retail, trade, online and media efforts. A two-day Twitter program at the end of October with City of Hope generated 82,963 Twitter impressions and additional donations to City of Hope. In traditional media, mushroom nutrition messages on pink were noted in 55 placements from August through October (21 broadcast, 18 print and 16 online), totaling more than 36.2 million impressions. Outlets reached include *Consumer Reports on Health*, *Men's Health*, *Vegetarian Times*, Health.com and others. The "Think Pink" ground media tour with lifestyle expert, Lynn Becker, garnered more than 2.1 million broadcast hits. To view one of the segments, please click here.

▶ Initiative project team

- Greg Seymour, President, ISMS General Manager AMGA, Australia; Manager, Mushrooms and Health Global Initiative
- Bart Minor, President, Mushroom Council, United States
- John Collier, Group Research and Development Manager, Monaghan Mushrooms Ltd, Republic of Ireland
- Mary Jo Feeney, Mushrooms and Health Global Initiative Operations Manager, Bulletin Editor, United States
- Glenn Cardwell, Accredited Practising Dietitian, Nutrition Impact P/L, Australia
- Chris Rowley, Communications Consultant, Australia
- Heidi Gengler, Vice President, Edelman Public Relations, United States

▶ Strategic communications group

Members of the Strategic Communications Group strengthen the Initiative's communication capability and develop a local public relations presence in each country whose industry is contributing financially to the project. Members of this group help facilitate stories about mushrooms and health appearing in their local media, monitor mushroom nutrition and health research, liaison with scientists, media and other influencers, and provide feedback to the Initiative. They include

- Franz Schmaus - Germany
- Francois Marche - France
- Ignace Deroo, Evy Detroch - Belgium
- Jose Antonio Jimenez Hernandez - Spain
- Kent Stenvang - Denmark
- Raymond van Buuren - Netherlands
- Elizabeth O'Neil - Canada