



Mushrooms and Health Global Initiative Bulletin

"An ISMS Global Initiative"

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From the Initiative Project Team

The Initiative Project Team (team) thanks you for your positive response to the first *Mushrooms and Health Global Initiative (Initiative) Quarterly Bulletin* distributed in February.

This issue of the *Bulletin* focuses on how public relations and communications work to bring research findings to the attention of the media and ultimately to consumers, provides updates on research topics and reminds readers to attend the ISMS sessions on mushroom marketing and nutrition.

Initiative Project Team

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- *Chris Rowley*, Communications Consultant, Australia
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Bulletin Distribution

ISMS helps facilitate projects such as the *Initiative* to ensure that the limited resources available to discover and spread the news about mushrooms and health are invested in the most cost effective manner. ISMS posts the *Bulletin* on its website so you can refer others to this important resource:

<http://www.isms.biz/>.

ISMS members will continue to receive the *Bulletin* electronically. Anyone receiving a duplicate copy of the *Bulletin* can request to be removed from the separate e-mail list maintained by the *Bulletin* editor by writing to info@mushroomsandhealth.com.

Mushroom and Health Research Review

Food Science Australia/ Commonwealth Scientific and Industrial Research Organisation's (CSIRO) systematic review of the literature to evaluate the strength of the science linking mushrooms to health is on target for completion around July. This comprehensive resource (described in the February *Bulletin*) can be used by the worldwide mushroom industry, researchers, media and health professionals to provide the scientific basis to communicate mushrooms' health benefits to consumers.

How Research Generates Publicity

With health as a key driver to position mushrooms as the ultimate superfood, eaten anyway, everyday, a research base is essential. Initiative Team members share their insight on how your country or company can use research to support public relations efforts.

Mushrooms in the Media

Margo Kraus, MS, RD, Edelman

How can a promoter of a specific commodity or food group repeatedly attract media attention? By following tried and true marketing maxims.

Reach your target as frequently as possible with a relevant message. We are not just trying to sell a brand of bread to bread eaters, we are trying to convince people that bread (or mushrooms as it were) is worth eating (or eating more often).

Using effective, highly visible marketing tools including public relations, advertising, nutrition communication and foodservice and trade



promotions, the Mushroom Council strives to increase purchase and consumption of fresh mushrooms. Key public relations strategies in the U.S. focus on encouraging consumers to eat more mushrooms, more often and be

willing to pay more for them whether eating at home or elsewhere. Specifically, public relations activities endeavor to:

- Improve consumers' knowledge of mushroom nutrition and health benefits (**need**)
- Build appreciation for mushrooms' convenience and versatility (**ease of use**)
- Remind consumers of mushrooms' unique flavor (**reminder**)

Memorable messages

Let's face it, fungi are fascinating and unlike any other food. Since there's much to say about them, the Mushroom Council conducted research in 2006 to find which messages consumers find most memorable and motivating. The results were:

- Mushrooms are nature's hidden treasure for taste, health, ease, versatility and satisfaction
- Mushrooms are an everyday, every way food

These messages are woven throughout everything we produce: press releases, editor responses, media interviews, newsletters, advertising and other communication pieces.

Media momentum for Vitamin D

In 2008, we offered consumers another reason to treasure mushrooms – vitamin D. The mushroom industry sponsored research, along with support from the Australian Mushroom

Growers Association and Canadian Mushroom Growers' Association, and is continuing to study the process for optimizing mushrooms' vitamin D content to levels several-fold higher than their existing amount. This research allowed mushrooms to capture the media's attention about their natural vitamin D content. Media, health professionals, retailers and consumers learned more about mushrooms and vitamin D through multiple public relations tools: a press release, fact sheet, nutrition e-blast, radio media tour featuring a registered dietitian and endless outreach to print, broadcast and online outlets.

The vitamin D momentum hasn't subsided – the popular consumer press continues to bring more and more attention to the vitamin for both its traditional role in disease prevention and its emerging importance as a key nutrient to promote optimal health. *Time* magazine lauded vitamin D as one of the top stories of 2007 and the popular U.S. daily show "Today" aired a segment in January on important vitamin D sources, including shiitake mushrooms.

"5 Things" make news

In March 2008, the *Miami Herald* positioned mushrooms as nature's nutritional treasure through an article titled, "5 Things You Didn't Know About Mushrooms." The "5 things" included mushrooms' vitamin D content, antioxidant capacity, umami and low calorie content. Also covered in the article was research that suggests if men substituted a 4-ounce (115 g) grilled portabella for a 4-ounce grilled hamburger over the course of the year, they could lose the equivalent of 5.3 pounds (2.4 kg). The article was picked up 17 additional times in top newspapers, including the *Chicago Tribune*, *Houston Chronicle* and *Providence Journal*.

Uniqueness of umami

Pitching unique and relevant angles resulted in additional coverage of mushrooms' distinct flavor as well as nutrition. "A New Taste Sensation," was how the *Wall Street Journal* served up a feature on umami that highlighted mushrooms on the front page of its "Weekend Journal" section. This placement was a result of an umami white paper produced by the U.S. Mushroom Council.

Solid research = media attention

Mushroom Council-funded research plays a large role in generating media coverage around mushrooms, especially when the study is credible, timely and meaningful to consumers. To ensure impactful coverage, the Mushroom Council alerts media, health editors and influencers when a new study has been published.

An animal study showed white button mushrooms may help boost immunity by enhancing natural killer cell activity. (See "Dietary supplementation with white button mushroom enhances natural killer cell activity in C57BL/6 mice *The Journal of Nutrition* 2007 137: 1472–1477, 2007. Abstract available at <http://jn.nutrition.org/cgi/content/abstract/137/6/1472>). This research by Dr. Dayong Wu attracted media attention from large national magazines, such as *Men's Health*, *Woman's Day* and most recently, *Prevention* magazine.

In summary, to repeatedly attract media attention:

- Create strategic messages and test relevance to consumers
- Provide consistent messages across all communication programs and materials (it's about reach and frequency)
- Offer the media compelling facts and information in interesting and timely ways
- Conduct scientific research that is credible and significant to media, health professionals and consumers
- Closely track emerging trends and topics to ensure mushrooms play a significant role in the latest food and nutrition trends

Mushrooms and Public Relations: An Australian Perspective

Mushrooms for Life

Chris Rowley, Communications Consultant

If scientific research is the framework that underpins the global health initiative, then public relations (PR) is the visible end point of the conversation with consumers. To put it in sporting terms, research findings can move the ball up the field, but it is the job of PR to score the all important goals. And with market research identifying the link between mushrooms and improved health as a key consumption driver of the next decade, increased consumer demand is the important goal. So, how is the game being played?

Over the past few years the Australian mushroom industry has adopted a systematic approach in taking research outcomes and distilling the findings back into easy to understand statements about the health benefits of mushrooms. At its most basic level this involves trying to provide consumers with consistent messages that eating mushrooms should be an essential part of any balanced diet.

The backbone of the process is an ongoing literature and information review, reinforced by strong international industry linkages. We have a great product, what we are looking for is every reason to let consumers hear the same consistent health message about why they should add more mushrooms to their daily diet.

The aims of the process are simple and they are to:

- Have consumers recognise mushrooms as an important food category on a par with meat, fish, vegetables and dairy; and
- Have consumers add mushrooms to every main meal, not only for taste, but also for the way in which they improve the health and wellbeing for family members.

The approach is not an exclusive one and the same basic process is being used by other countries and for the Mushrooms and Health Global Initiative. The messages are integrated into every industry message and delivered in any number of ways – from time honoured media releases, to radio and television interviews, and mixed into other communication mediums such as on-line fact sheets and podcasts.

The key ingredients (other than mushrooms) in all the communication undertaken are to use the right language and carefully target the health message. If you read any of the fact sheets you will find simple, easy to understand information on topics ranging from "Mushrooms and Vitality" through to "Antioxidants", "Essential Minerals" and even "Keeping Trim". The same approach to key messages is used in media activities and other communications (To see how this approach is used please visit the website at www.mushroomsforlife.net).

From the consumers' viewpoint, they want to know the information is credible. And while the science is important, consumers want simple messages that they understand in the context

of what they eat. Ergothioneine may be an important part of the mushroom health story to researchers, but to consumers the take home message is that mushrooms are a rich source of antioxidants and that antioxidants can help prevent some diseases.

The same approach applies to cancer and Vitamin D. While researchers are excited by the role of Vitamin D in disease prevention, consumers want to know what it means to them and importantly, what foods they can add to their diet to gain the health benefits of Vitamin D.



The approach is working and working well. In 2005 there were over 30 news articles in Australia on the health benefits of mushrooms. In 2006 this doubled to 63 new articles and this has continued to expand as more

research information becomes available. Not only has the number of direct health stories increased but there has also been a five fold increase in the number of recipes that mention the health benefits of mushrooms. Monitoring has shown that an unprecedented 64 per cent of consumers now believe mushrooms to be very nutritional. This is a great start and with research continuing to confirm the nutritional benefits of mushrooms, PR will continue to play an important role in providing consumers with many more reasons to add mushrooms to their daily diet.

Headlines such as ***Mushroom fights cancer / Mushrooms may be cancer weapon*** have appeared recently. The take home message for consumers from these headlines is loud and clear – mushrooms + fight + cancer. The headline and message is a great example of the PR opportunities that exist.

The story on which these headlines were used originated from research undertaken by Dr. Daniel Sliva from the Methodist Research Institute in Indianapolis (Sliva D, Jedinak A et al. *British Journal of Cancer* 2008; 98; 1348-1356. Published online March 25, 2008

<http://www.nature.com/bjc/journal/v98/n8/abs/6604319a.html>). The research found that an extract from the *Phellinus linteus* mushroom reduced growth of new cancer cells and blocked new tumour feeding blood vessels.

On the day the results were released there were 19 mentions on radio in Australia with a further eight press clippings the following day. Many reports on the story did not mention any background on the *Phellinus linteus* mushroom. The key fact was that mushrooms fight cancer.

Even though the story did not originate in Australia it gained valuable coverage, with a memorable take home message for consumers. All that remained from an Australian perspective was to “on-sell” the story information to key contacts to increase the scope of the coverage. All in all, the story was a lot like a free shot on goal. Go Mushrooms!

Research Update: More on Vitamin D

The dual tracks of science and public relations continue to surround vitamin D as discussed by Ms. Kraus above and as described by Mr. Cardwell in “Sun Shines on Mushrooms” (February *Bulletin*). Mushrooms are the only non-animal food that can provide vitamin D naturally. Mushrooms have relatively high levels of ergosterol, which, under the action of UV light gets converted to ergocalciferol (vitamin D₂). The U.S. National Institutes of Health, Office of Dietary Supplements has published a fact sheet on vitamin D that mentions mushrooms as a source of vitamin D₂ in varying amounts.

<http://ods.od.nih.gov/factsheets/vitamind.asp>.

The emerging research on the role of vitamin D and health beyond its well documented role in bone health, is that – emerging, and not yet settled. The April issue of the *American Journal of Clinical Nutrition* has devoted an entire supplement to Assessment of Vitamin D in Population-based Studies (*Am J Clin Nutr* 2008;87(suppl):1079-1105S. See www.ajcn.org for abstracts or pay to download the entire article if not a subscriber). Millen and Bodnar, writing in the Preface, state that investigators have cited surprisingly high rates of vitamin D deficiency throughout the world, including ‘healthy’ persons living in developed countries where it was thought that vitamin D

deficiency was a thing of the past. Although accumulating evidence suggests that vitamin D may affect many different biological systems and health outcomes, this research is in its infancy. Valid methods for assessing vitamin D status, the development of vitamin D nutrient databases, controlled clinical trials that link vitamin D status to health outcomes other than bone health are needed to support its role in health promotion and disease prevention.

Of interest to the mushroom industry will be research around the effectiveness of D2 and D3 (found in oily fish, egg yolk, some cheese and fortified foods and supplements depending on country regulations) in raising serum levels of 25(OH)D. Hollick and Chen ("Vitamin D Deficiency: A Worldwide Problem with Health Consequences," *Am J Clin Nutr* 2008;87 (1080S-1086S) review the research and report on their observation that 1000 IU vitamin D2/day was as effective as 1000 IU D3/day in raising and maintaining serum 25(OH)D concentrations. It appears more research is needed on the bioeffectiveness of the different forms of vitamin D. In the meantime, the industry continues its efforts to bring vitamin D-rich mushrooms to market. Consumers will need multiple sources of this important vitamin to meet what is anticipated to be higher recommended levels of intake.

Pennsylvania State University's 50th Annual Mushroom Short Course June 8-10, State College, Pennsylvania will have a how-to session on post-harvest requirements to develop D-rich mushrooms and the potential market for this one-of-a-kind functional food. For more information see the website: <http://quest.cvent.com/EVENTS/Info/Summary.aspx?e=dce063ba-91ef-42a9-b545-a139651a8ba3>

More mushroom research in the news

Fungi aid immune system's fight

Science News Online March 8

<http://www.sciencenews.org/articles/20080308/note14.asp>.



Although considered the 'plain Janes' of edible fungi, white button mushrooms have been found not only to crank up the activity of natural killer cells, but also

promote maturation of dendritic cells and their ability to respond to foreign targets. See Ren, Z, Guo Z, Meydani SN and Wu, D. "White button mushroom enhances maturation of bone marrow-derived dendritic cells and their antigen presenting function in mice." *The Journal of Nutrition*, 2008; 138:544-550. <http://jn.nutrition.org/>.

Mushroom research of interest

Ergothioneine and cardiovascular disease

Martin KR. "Whole mushrooms inhibit *in vitro* monocyte binding to human aortic endothelial cells." Oral presentation, Experimental Biology, San Diego, CA. April 2008.

Martin KR. "The novel antioxidant ergothioneine (ERT) found in dietary mushrooms inhibits monocyte binding to human aortic endothelial cells." Experimental Biology, San Diego, CA April 2008. Contact the journal for publishing information: <http://www.fasebj.org/>. Or contact the author Keith.R.Martin@asu.edu.

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