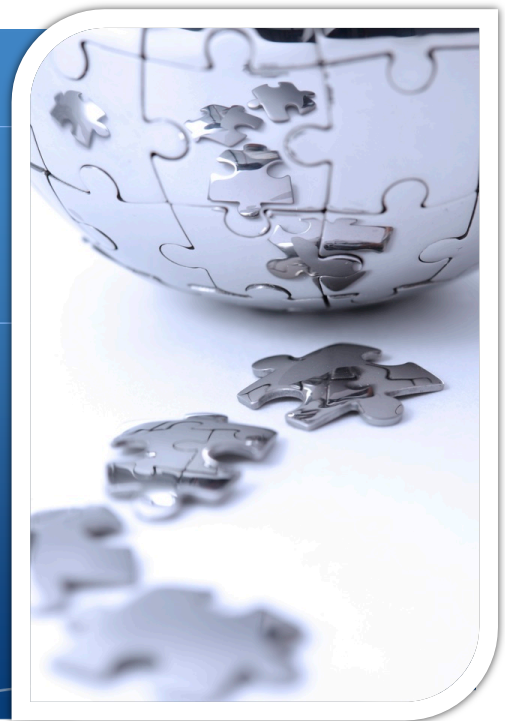


GHI Matters

The newsletter of the Global Harmonization Initiative

March/April 2011



Message from the President

When materials come into contact with food, substances may migrate from the food into the material. Of more concern, however, is that substances may migrate from the material into the product. This may not only influence the flavour of the product but may potentially make the product unfit (i.e., unsafe) for human consumption. Many countries have regulations that specify the acceptable concentration of substances in the product, from a food safety point of view, but these regulations differ between countries.

In the *European Hygienic Engineering & Design Group (EHEDG) Yearbook 2011-2012*, published in April 2011, an article, "Construction materials in contact with food and global food safety regulations," discusses this topic. My co-authors Stefan Åkesson (TetraPak, Sweden), Olaf Heide (Habasit, Switzerland), Piet Steenaard (EHEDG) and Julie Larson Bricher (Quiddity Communications/GHI) and I conclude that a united effort by scientists and engineers within the framework of GHI will help advance successful harmonisation of global standards for food-contact materials to better ensure food safety for all consumers worldwide and streamline global trade of food processing machinery and packaged food products. The article

[continued on page 2](#)

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Achieving consensus on the science of food regulations and legislation to ensure the global availability of safe and wholesome food products for all consumers.

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can be found on pages 69-74 of the EHEDG Yearbook, which can be downloaded from the association's website (www.ehedg.org) at no cost.

In addition, Gisela Kopper and Alejandro Ariosti have written an extensive chapter on materials intended for contact with food in GHI's first book, "Ensuring Global Food Safety - Exploring Global Harmonization" (see page 7 of this issue). They describe the significant differences in regulations of food-contact materials between countries, with an emphasis on packaging materials. During the international meeting Global Food Contact, to be held in Frankfurt, Germany, 14-16 June 2011, Alejandro Ariosti will address the audience with a keynote presentation on the topic. More information on that meeting is given in the agenda on page 4.

The GHI Board supports the formation of a new working group on this topic, and I encourage our members to contact our Working Group Coordinator, Shirley Jankowski at shirley.jankowski@globalharmonization.net if you are interested in leading this working group or participating in it as a member.

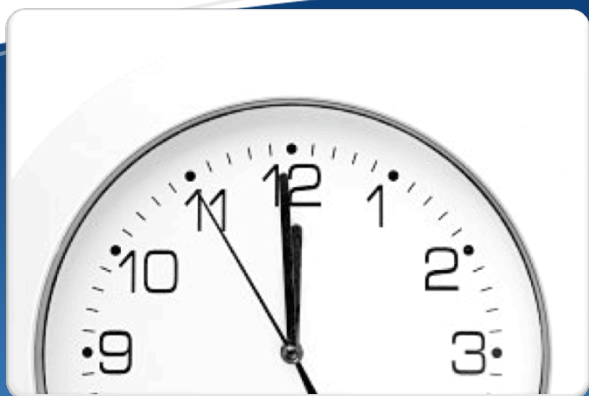
With kind regards and best wishes to you all, we look forward to your continued support.

—Huub Lelieveld, President, GHI



GHI meetings and workshops are where the consensus happens!

*GHI has legal non-profit entity status and its charter and constitution are registered in Vienna, Austria as the GHI-Association (ZVR453446383).



Become a vital contributor to providing the world's regulators, policymakers and public health authorities with a foundation for sound, sensible, science-based food laws and regulations

It costs only a few minutes to enroll

In order to build a truly global, impartial consensus on the current scientific knowledge that will inform objective regulatory decision-making on the world stage, GHI actively encourages scientists from industry, government and academia to join as individual members **at no cost**.

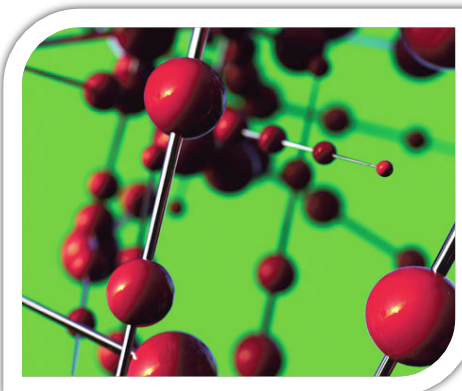
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www.globalharmonization.net

Update: Working Group on Nanotechnologies

Capturing the Potential of Nanotechnology for the Food Sector

The nanotechnology toolbox, full of high precision instruments and processes to modify and engineer food materials at the nanoscale, creates many new opportunities for innovation in food products and the food sector. Nanotechnologies offer contributions to the solutions of grand challenges that humankind is facing in relation to food. The ability to benefit from these solutions is dependent on the following prerequisites: 1) that the technology is used; 2) that the products created with it are accepted by the consumers; and 3) and that regulatory authorities do not stifle use of nanotechnologies. At the moment, there is uncertainty about all three of these prerequisites, which are all related to regulation and harmonization of regulation.



At the International Union of Food Science and Technology (IUFoST) conference in Cape Town, South Africa in August 2010, a meeting was held to discuss the harmonization of regulations related to the application of nanotechnologies in food applications. The decision was taken to establish a GHI Working Group on Nanotechnology to address the concerns related to emerging regulatory issues in this area and the lack of harmonization in different parts of the world.

Some of the discussion at this meeting focused on the European debate about the inclusion of nanotechnologies in the new "novel food" regulation that is currently under debate. The latest proposal for this regulation has been rejected, and the commission is working on a new proposal. For the time being, politics focus on labeling food products that contain nanomaterials. Such a regulation meets strong opposition from the food industry, which fears that consumers will be misinformed and will draw the wrong conclusion that nanomaterials in foods are unsafe. This not only makes the food industry reluctant to admit that they use nanomaterials in food products, but the uncertainty also makes industry hesitant

to develop new products based on nanotechnologies. The lack of good harmonized regulations that reduce the risks of persistent engineered nanomaterials (ENMs) hampers development of products that can benefit the consumer and the society as a whole. If such regulations were in place they would help in building a trust base with consumers, paving the way to large scale adoption of the solutions offered by the technology. High time therefore that the food scientists active in this field cooperate to achieve such a goal.

Both the European Food Safety Authority (EFSA) and the International Life Sciences Institute (ILSI) Europe have taken initiatives to come up with guidance documents for the use of ENMs in food. While the EFSA effort is directed towards procedures to get food products with ENMs approved in the European Union, the ILSI document aims at guiding the food industry towards safe use of these materials. The EFSA Scientific Committee very recently adopted the EFSA guidance, which will be published very soon. The ILSI guidance is in its final stage of development and is expected to be published before Summer 2011. Although relevant for the global food sector, these two guidances obviously are the result of European initiatives. Let us hope for and use our influence to promote the adoption of these guidances as a basis for regulation in other parts of the world.

If you want to play a role in the harmonization of legislation nanotechnologies in food, you can become a member of the GHI Nanotechnologies Working Group by sending an email to frans.kampers@wur.nl. We plan to have the next meeting of the Working Group in the fall of this year.

—*F.W.H. Kampers is Chair of the GHI Working Group on Nanotechnologies. He is based at Wageningen UR, The Netherlands.*

Initiating Ambassadors to Global Harmonization

There are several means to reduce world hunger. Most of the major efforts concentrate on agricultural production; i.e., making more food. International cooperation for developing and sharing agricultural production technologies is exemplified by the Consultative Group on International Agricultural Research (CGIAR), a consortium of 15 research centers around the globe. Sufficient food is produced to feed every man, woman and child on the planet, a testament to agricultural research. Yet, more than 1 billion people remain hungry.

Post-harvest describes everything after harvest, including transfer, transportation, storage, processing (from cleaning and sorting to formation of new products), packaging (including transportation and individual product packaging), and retail. Food losses occur at every step of this food chain. Many local and national efforts address post-harvest food losses but there is little or no formal international cooperation. One innovative program that deserves mention began in Vietnam, Myanmar, Cambodia and Thailand to reduce food losses and create small businesses that prepare value-added foods through village-level food processing.

Food regulations are designed to promote food safety, and at times, the enforcement of these rules requires the removal of potentially dangerous foods (i.e., food loss) before they reach consumers, and rightly so. However, food legislation or regulations that are not based on scientific evidence may intentionally limit food availability due to trade considerations, or may limit food as an unintended negative consequence which results in the unnecessary destruction of otherwise safe food.

GHI President Huub Lelieveld expressed our *raison d'être* and approach very succinctly: "Providing credible, impartial information that promotes science-based policy-making worldwide will have a significant, positive impact on several fronts, including eliminating the unnecessary destruction of food, reducing world hunger, and increasing food safety and health for all." Who could argue with such goals? But no argument or discussion will occur without a realization that regulations must be harmonized so that they do not result in limiting our food supply.

GHI Ambassadors spread the message that through consensus-building, legislation and regulations can be harmonized, globally. Ambassadors are essential to bring the message of GHI to a wider audience. If you are reading this edition of *GHI Matters*, you recognize both the importance and potential of this approach. The mere fact that GHI was formed demonstrates that this recognition is universal.

GHI works to remove scientifically unjustified barriers to the movement of food within and across borders through working groups that evaluate risk/benefit of food regulations with impact on food supply. The GHI Ambassador Program is designed to support this goal by empowering selected GHI members to invite scientists in their country or region to join GHI, foster new opportunities for information sharing, and serve as front-line representatives for GHI.

—Dr. Kenneth Marsh, GHI Ambassador Program Coordinator



Calendar

GHI holds or facilitates a number of general and working group meetings, symposia and workshops throughout the world. GHI members and ambassadors also make presentations at scientific meetings around the world. Here's a quick list of upcoming events where you can find us!

JUNE

11-14

IFT Annual Meeting & Food Expo, New Orleans, Louisiana, USA (www.ift.org)

A general GHI meeting and special symposia are planned for this annual international scientific conference.

14-16

Global Food Contact, Frankfurt, Germany (www.food-contact.com)

This international meeting focuses on global regulations for food contact materials, and several members of GHI are involved. One of the top-level presentations will be given by Alejandro Ariosti, an active member of GHI. Alejandro Ariosti is also a contributor to the book, *Ensuring Global Food Safety - Exploring Global Harmonization*.

Check out our website at www.globalharmonization.net for updated calendar and event listings.

Update: Working Group on Chemical Food Safety & Toxicity

Working Group Proceeds with Knowledge-Building Activities

Keeping food production up to par in order to nurture a growing world population is of increasing importance—and taking into account the population forecasts—a huge challenge. To reach food availability goals, the three most important issues that have to be addressed are: 1) preventing and reducing of foodborne illnesses; 2) increasing global market accessibility of food; and 3) reducing food losses. To achieve food availability for all, it will be very helpful if worldwide international standards for food safety are accepted, particularly with regard to residues of pesticides, veterinary drugs and contaminants from natural and industrial origins. Pesticides and antibiotics are means to reduce food losses to pests and diseases, including those detrimental to human health, and as such these chemicals have a role to play in increasing food availability worldwide.

In 2010, the Working Group on Chemical Food Safety & Toxicity was established as part of the Global Harmonization Initiative. Its goal is to appraise—analytically, biogeochemically and toxicologically—the presence of natural and artificial residues of antibiotics, pesticides and other chemicals that might be linked to food production methods. The purpose of this exercise is to propose a way forward on a global level, since many different standards exist in the world and there is mounting political pressure to diminish the presence of all sorts of differently regulated chemicals in line with increasing analytical capabilities.

Questions of food safety and food security in relation to low levels of residues and contaminants can only be answered adequately when they are evaluated through different research disciplines. Some questions to be addressed are: What is the toxicological relevance of low levels? What is the perception of the consumer? How do we effectively communicate to the consumer new insights with respect to the presence and effects of low levels of chemicals? What is the effect of multiple biogeochemical sources of regulated chemical compounds on establishing safe levels from toxicological and legal perspectives? What are the analytical possibilities to monitor low levels in the context of multiple sources and food legislation? What is the impact of setting limits on the final losses of food?

The working group has produced a number of deliverables to be used in the consensus-building process of GHI. In

the March/April 2011 edition of the *Global Aquaculture Advocate*, a substantial piece was published on food safety at the molecular level, authored by members of the GHI Working Group on Chemical Food Safety and Toxicity.¹ In this article, the authors show that the zero-tolerance precautionary approach to ban certain antibiotics from food has proven unworkable as a result of continuing analytical progress. New regulatory standards on chemical residues do not adequately address the situation, leaving technical progress, not toxicological relevance, to determine undesirable levels. As new chemical substances are identified in nature, detection must identify toxicity in terms of actual levels of exposure, but also whether a causal link between chemical and illegal conduct can be established.

This was brought to the fore in 2010 when a number of Dutch researchers showed that the presence of chloramphenicol in food could be the result of the presence of natural background.¹ We responded to their novel claim with reference to our work on the natural presence of chloramphenicol in food.¹ As a result of this intellectual exchange, a decision was taken to organize a multidisciplinary day-long symposium on the future of global food safety regulation. This symposium will be held on 4 October 2011.

—**Jaap C. Hanekamp** is Chair of the GHI Working Group on Chemical Food Safety and Toxicology. He can be reached at jaap.hanekamp@globalharmonization.net.

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- ³ Hanekamp, J.C., G. Frapporti, and K. Olieman, 2003. Chloramphenicol, food-safety and precautionary thinking in Europe. 6 *Environmental Liability* 209.
- ⁴ Hanekamp, J.C., J.H.J.M. Kwakman, and K. Olieman, 2011. Crossing the ecological threshold – of scientific analysis, natural chemicals and global trade. 399 *Analytical and Bioanalytical Chemistry* 2223.



Update: Working Group on Mycotoxins

Working Group on Mycotoxins Re-forms As Stand-Alone Body

Mycotoxins in food are a global problem. Why? Because mycotoxins are the reason that huge amounts of food become unsafe for consumption, both in countries in which food is abundant and in countries where there are chronic shortages of food. Contamination of food by mycotoxins causes significant economic damage, and more importantly, starvation of millions of people. The moulds that produce mycotoxins often do damage while the food, in particular cereals, are still on the land, waiting to be harvested. Whether or not the moulds will grow and how fast depends on the local climate, and consequently, it is very difficult to control their growth. Half of the problem, however, occurs after harvesting, during transport (causing damage that makes it easier for the moulds to start growing) and during storage.

The severity of the problem was discussed during a GHI workshop on mycotoxins in Cape Town, South Africa during the 15th IUFoST Congress of Food Science and Technology in August 2010. Examples were shared by scientists and experts on food mycotoxins from Armenia (Dr. Karina Grigoryan), Germany (Dr. Herbert Buckenhueskes), Iran (Dr. Hamid Ezzatpanah), and South Africa (Dr. Gordon Shephard and Dr. Hester Vismer). Dr. Firouz Darroudi discussed a rapid *in vitro* test system to assess carcinogenic mycotoxins in food. Dr. Rebeca López-García (Mexico) wrote a chapter for the "Global Food Safety book" on mycotoxin management as an international challenge, requiring harmonization to protect consumers and economy.

Although it will be very difficult to control the growth of moulds in the field, during storage mould growth and the associated production of mycotoxins can be controlled by controlling the storage conditions. This, however, requires investments to control moisture and temperature distribution in silos and other storage facilities. Despite the fact that over the past decades a tremendous amount of data has been collected, demonstrating the severity of the problem and knowing that several mycotoxins are toxic in very low concentrations (a few micrograms per kg), such investments do not take place because of competition

between countries of origin of cereals and the low margins. The only way to change this situation seems to be regulations that prescribe that cereals must be stored under adequate conditions to prevent fungal growth. Of course, such regulations then must be the same throughout the world. They may include limits for temperature distribution (thermal insulation of silos) and for control of relative humidity.



In previous years, GHI incorporated the topic of mycotoxins and harmonization of global legislation under its Working Group on Chemical Food Safety & Toxicity, which deals with topics involving naturally occurring toxins in the global food supply. However, GHI's Executive Board has taken the decision that the focus on mycotoxins warrants a targeted focus to streamline and enhance the effectiveness of related knowledge-building workshops and

consensus-building activities. As a result, the Working Group on Mycotoxins has been re-formed as a stand-alone GHI working group to discuss the size and distribution of problem and the conditions that will be effective in reducing post-harvest losses due to mycotoxins, all based on scientific evidence.

GHI members who are interested in joining this re-formed WG may contact Shirley Jankowski, GHI Working Group Coordinator, for more information at shirley.jankowski@globalharmonization.net.

NEXT ISSUE

Stay tuned for the May/June edition of *GHI Matters*, featuring:

- GHI Meetings Summer 2011 Calendar
- WG on Listeria in RTE Foods Publication in *Food Control*

Ensuring Global Food Safety: Exploring Global Harmonization

edited by C.E. Boisrobert, A. Stjepanovic, S. Oh, and H.L.M. Lelieveld

Reviewed by W.H. Sperber, PhD
Global Ambassador for Food Protection, Cargill (retired)

Upon first seeing the title, *Ensuring Global Food Safety*, the reader might expect that this would be a book about traditional food safety, detailing the hazards and control measures involved in food production, processing, and distribution. In fact, this book is nothing like that. Rather, the book's content is better described by its subtitle, *Exploring Global Harmonization*.

Organized by several founders and principals of the Global Harmonization Initiative (GHI, www.globalharmonization.net), the book extends an important GHI emphasis on food security and the economic and social "right to food" by developing a series of discussions about contemporary food safety issues and the feasibility and necessity of harmonizing a myriad of national food safety procedures and regulations with international standards. The need for such harmonization has been created by the growing global food trade and the increasing difficulty of identifying and controlling unexpected hazards.

Benefitting from the multi-disciplinary expertise of 58 contributors, the book is organized in 24 chapters. Major chapters cover regulations in many countries and procedures such as performance objectives, analytical methods, capacity building, and control of microbiological risks. The last, dealing with the harmonization of regulations for *Listeria monocytogenes* control, may be a useful model for the harmonization of regulations for additional foodborne microbial pathogens.

A wide range of specific issues is covered in additional chapters on antibiotics, mycotoxins, food additives such as monosodium glutamate, food packaging, nanotechnology, novel processes, carcinogens and other harmful chemicals, nutrition, and ethnic foods. Most of these chapters address topics that are not commonly encountered in traditional food safety texts, e.g., the analysis of the carcinogenic properties of foods and applied nutrition. These treatments of atypical issues are benefits for a profession in which most attention to food safety hazards is typically given to microbiological hazards.

This book should be a useful reference for those attempting to harmonize food safety regulations. It should also serve as a stimulus for the growing network of food safety professionals who are involved in emerging efforts to create or restructure national and international food safety organizations, thereby facilitating the harmonization of global food safety procedures and regulations.

This review appeared on pg. 92 in the August 2010 issue of Food Technology magazine, a publication of the Institute of Food Technologists (IFT), Chicago, IL USA (www.ift.org).

Ensuring Global Food Safety

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DESCRIPTION

Based on the principles of the Global Harmonization Initiative (GHI), **Ensuring Global Food Safety** offers a rational and multi-faceted approach to current food safety issues, while arguing that a science-based global regulatory framework will enhance the safety, availability and quality of the food supply worldwide. GHI was specifically established to help build global consensus on the scientific evidence underpinning food safety policymaking. This book provides practical examples in key areas such as microbiology, toxicology and nutrition, as well as discusses possible improvements necessary to sustain the integrity of the global food supply in the 21st century.

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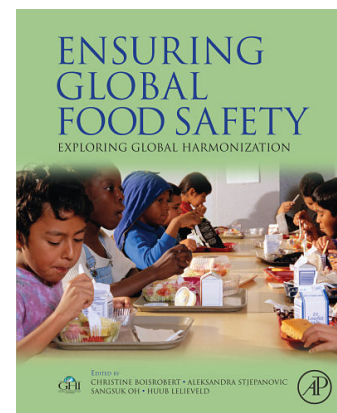
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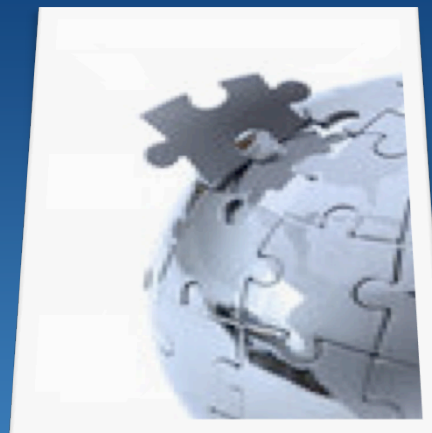
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If you are interested in becoming a member of GHI, we invite you to take these simple steps:

1. Please visit www.globalharmonization.net and complete the Individual Membership Enrollment form. You will be asked to provide full contact information, current professional affiliations and areas of scientific expertise. There is no fee to join GHI.
2. Once your application has been accepted, you will receive notification via email, along with information from GHI regarding upcoming meetings, working groups workshops, and more.
3. For further questions on GHI membership, please send your inquiry to the attention of the Honorary Membership Director via email at membershipdirector@globalharmonization.net.



Gain an influential voice in consensus with other experts that will have a real impact on reducing world hunger, improving food safety and nutrition, and supporting new technology applications.



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