

Short Communication



Global Harmonisation of Food Safety Regulations

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While the globalisation of world trade has created new pathways to economic growth for many nations, the trend toward a “one-world economy” has also exposed critical differences in international laws and regulations that are designed to protect the world’s citizens. These differences may result in the needless destruction of healthy food and hamper the introduction of new technologies designed to make food healthier and safer.

Food security and nutrition

The world produces enough food for everyone, but regrettably it does not reach everyone. The result is that today a *billion people* suffer from chronic hunger. A significant percentage of the food is destroyed during harvesting, transport and storage. It is bad enough that much food is spoiled due to inadequate preservation, but it also happens that food is deemed unfit for human consumption—and consequently destroyed—without scientific justification, as a result of inadequate or laws that are based on opinions that are not supported by scientific data.

The traditional ways to preserve food often reduce the concentration of essential nutrients, which leads to populations suffering from a dangerously reduced resistance to disease. This particularly affects children during their growth phase. Over the past decades, much research has been done to develop technologies that preserve foods from spoilage while retaining these vital nutrients. Conflicting, non-science-based regulations act as barriers to the creation and adoption of these technological solutions.

Food safety

The function of food safety regulations is to protect consumers from food poisoning. This is needed because there are unscrupulous producers and tradesmen who are more concerned about making a profit than the health of their customers. Significant differences in food safety regulations between nations can, and do, result in situations in which a food that is considered safe in one country is considered unfit for consumption in another country. This, in turn, leads to the destruction of imported foods that are safe but do not meet local regulatory requirements, or

prevents countries from exporting food to areas where it is needed. Without globally harmonised, science-based regulations, rules intended to protect consumers from foodborne illness or death merely serve to erect trade barriers that reduce the availability of food and inhibit technological advances that ensure public health.

Technology and method development

New technologies and scientific methodologies may have drawbacks, so there must be proof that such technologies offering beneficial solutions for one problem will not jeopardise other safety aspects. Thus, there is a fair and logical requirement to prove that food produced using a new process is still safe. Defining what constitutes a “safe” process for ensuring food safety is challenging when the laws and regulations of countries differ, because validation must occur in many countries following different protocols, resulting in significant hurdles to new technology application.

For example, to protect crops against insects and other pests, producers use traditional prevention methods. Clearly, traditional methods work but they do have drawbacks, such as potentially toxic residues, destruction of nutrients, and dramatic losses to crushing or foraging animals. Scientists and engineers are developing methods to minimise, or eliminate, such drawbacks. Results include more insect-resistant crop varieties, packaging that effectively protects against mechanical damage and pest infestation. Also, to prevent microbial spoilage, traditional preservation methods are used, which prevent microorganisms from doing harm to the food, but at the same time destroys nutrients (as well as other attribute, such as flavour). Research has led to preservation methods that need neither heat nor chemicals to stop microbes from doing harm and help retain more of the food’s essential nutrients.

Without agreement between countries about the validity of these technological approaches, neither food producers nor consumers will benefit from the increased food safety and nutritional benefits they can provide.

Testing protocols

Testing protocols used to establish the safety of the food itself or to validate a preservation process’ safety also require harmonisation. A case in point is the prescribed testing protocols involving the use of animals, which not only poses serious ethical objections but, for processed food to cross borders, meeting legal requirements can be difficult, costly and time-consuming. There is increasing evidence that the results of animal testing to determine toxicity of foods, cosmetics and pharmaceuticals have little or no relevance to humans or human health outcomes. In fact, easy-to-apply alternative methods have been developed. Although these animal-free methods have been shown to return a faster, more accurate speed-to-result, expected financial benefits of their use cannot be realised if the protocols for product safety testing are not globally harmonised.

The Global Harmonization Initiative

In 2004, members of the International Division of the Institute of Food Technologists (IFT) and representatives of the European Federation of Food Science and Technology (EFFoST), the European section of the International Union of Food Science and Technology (IUFoST), decided to try to change this undesirable and globally harmful situation. After a series of meetings and

workshops, in 2007 the Global Harmonization Initiative (GHI) was officially established. Shortly after that, many scientific organisations joined the effort, which now boasts a growing, truly global membership dedicated to achieving consensus on the science of food regulations and legislation to ensure the global availability of safe and wholesome food products for all consumers.

GHI's strategy is to provide a networking forum in which food scientists can practice science. Its goal is to foster global scientific consensus on issues for which globally equal regulations will help strengthen global food safety and alleviate global hunger and nutrition problems. By producing independent, authoritative information based on scientific consensus, GHI hopes to inform the world's regulators and lawmakers so that regulations are based on sound science and not reactionary conclusions after real or imaginary food safety incidents. Stakeholders may use GHI's objective consensus documents to convince their governments that harmonisation of food regulations is possible.

GHI's intention is to involve scientists from all countries and, to achieve this, there is no membership fee. To make colleagues aware of the initiative, GHI organises workshops, courses and meetings in many countries. Meanwhile, there are a number of working groups (WG's), focusing on a variety of topics, including Mycotoxins, *Listeria monocytogenes*, nanotechnology, high-pressure sterilisation, food safety in relation to religious food preparation, the toxicity of food ingredients. The task of each WG is to develop a concept document for discussion by experts worldwide, followed by global distribution to food scientists, technologists and engineers, with the goal of reaching a significant global consensus on the science involved in the specific area of interest.

It may be clear that the more scientists join, from all areas in the world, the more influence GHI will have on the development and improvement of food safety regulations. In other words, your membership of GHI will make a difference!

More information can be found on the website, www.globalharmonization.net and to sign up as a member you just go to www.globalharmonization.net/user/register).