

Summary of the 15th annual symposium of the Scientific Committee established at the Federal Agency for the Safety of the Food Chain entitled “Changing consumption patterns: What about food safety?”

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On December 3th, 2019, the Scientific Committee* established at the Belgium Food Safety Agency held its 15th annual symposium in Brussels. The symposium was dedicated to changing consumption patterns and its effects on food safety. In a first session, the quickly changing consumption patterns and great diversity between consumers were highlighted. The question was raised how these changes can be detected in time and how they can be taken into account when assessing food safety risks. Next, the evolution of the market was assessed with a focus on food innovation. Finally, the impact on food safety of changing consumption patterns and novel foods was assessed for different hazards (micro-organisms, chemical dangers, allergens) and packaging materials.

The first session focused on changing and diverse consumption patterns, which are evolving as a result of various factors. Prof. Christophe Matthys (KULeuven) demonstrated that capturing the existing consumption patterns and trends is not easy. Currently national consumption data, representing a general overview of the population, are obtained using the EFSA EU menu methodology. This data collection process is slow and not suitable for identifying trends. In addition, most recent data for Belgium date back to 2014. Potential solutions and corresponding challenges were discussed, such as collecting data from retailer fidelity cards (privacy issues!) and via social media (Twitter screening). Estimates of food quantity could be easily obtained via smartphone pictures. Many apps to visualize food items already exist. As of yet there is no easy solution to reliably capture consumption data but technology is rapidly evolving.

Prof. Carl Lachat (Ghent University) provided insights in out of home consumption. Eating out of home is gaining importance in our diets and can be a driver for poor diets, increasing energy intake and obesity. The current approaches to assess the impact of eating out of home are focused on the place of preparation or the place of consumption. It is necessary to redefine the concept ‘out of home consumption’, to take into account new concepts such as eating on the go and home delivering services. Eating out has become a substantial driver of diet quality and an important factor to consider when assessing food safety risks.

Prof. Katia Castetbon (ULB) highlighted how cultural influences can affect food habits. In Belgium, regional differences have been observed in exposure to food hazards because of differences in dietary patterns. In addition, culture, education level and migration status also affect consumption patterns. Furthermore,

* About the Scientific Committee established at the FASFC:

The Scientific Committee is an advisory body established at the FASFC, which provides independent scientific advice on risk assessment and risk management in the food chain (food and feed safety, animal health and plant health). The opinions are public and are published on the website of the Scientific Committee (<http://www.afsca.be/scientificcommittee/opinions/>).

there are specific consumer subgroups whose dietary habits are not identifiable in national consumer surveys.

Prof. Annemie Geeraerd (KULeuven) focused on how consumers can, with an eye on sustainability, make different choices related with their food purchases and consumption patterns (to limit food waste, eat more plant-based foods, re-use packaging, etc.). However, it remains a challenge to raise the awareness of the consumers about specific food safety issues that may be relevant for each choice.

The evolution of the market was discussed during the second session. Dr. Lieven Herman (ILVO) presented how new consumer demands drive innovation in the food industry. An important trend is the increasing interest in non-meat protein sources as ingredients in novel products. Challenges from a food safety point of view were illustrated by some examples: microbial biomasses, insects, algae, components produced by genetically modified micro-organisms, superfoods, edible flowers and frozen vegetables consumed as ready-to-eat.

Frank Vandendriessche (Food industry expert) and Julien Mahieu (Food retail expert) addressed how the food industry responds to consumer demands. Starting point is that the 'average' consumer no longer exists and there are various consumer concerns related to nutrition and health, animal welfare and sustainability. Consumers nowadays are also looking for convenience, zero waste, clean labels and authenticity. The food industry response includes minimal processing, adding less additives, reduction of sodium, etc. Another important aspect is sufficiently informing the consumers. However current information systems, for example "Nutriscore", are not always sufficiently scientifically supported or can be difficult to interpret for the consumer.

In the third session specific hazards related to changing consumption patterns and novel foods were addressed. Prof. Jacques Mahillon (UCLouvain) focused on the microbiological risks associated with changing consumers habits. The trend towards increased consumption of raw food and the preservation of surpluses under unfavourable consumer conditions increases the risk of foodborne diseases especially in sensitive consumer groups. In that respect special attention was drawn to the risk of raw food, leftovers and cross-contamination in the kitchen. Some future perspectives were discussed for interfering with the development of foodborne pathogens, by using bacterial and fungal molecules (e.g. bacteriocins) or bacterial viruses (bacteriophages or phages).

Prof. Bruno De Meulenaer (UGent) and Dr. Gabriel Mazzucchelli (ULiège) elaborated on the trend of replacing animal proteins with alternative proteins in the diet, which increases the risk of developing food allergies and exposure to chemical contaminants such as nickel, toxic plant proteins, mycotoxins and acrylamide. For allergens, the risk of cross-reaction with existing allergies exists. For example, insects can have cross-reactivity with the allergy for shellfish and dust mite. On the other hand, the changing environment, in particular climate change, can also increase the occurrence of chemical hazards. For instance, corn will have a higher vulnerability for aflatoxin contamination on the European continent.

The final speaker, Philippe Saillard (French expert representing the 'Centre Technique Agro-alimentaire'), focused on the risks of innovative packaging. These novel types of packaging, even when 'natural' or biodegradable, may give rise to unexpected exposure to chemical contaminants. For example, melamine can migrate from the food contact material (e.g. bamboo) to the food product. At this point in time, a lot of unanswered questions about the safety of these new types of packaging remain and clear guidance on how to assess these materials is lacking.

In conclusion, the symposium offered an opportunity to reflect about food safety in the context of rapidly changing dietary habits and food related innovations. Speakers demonstrated that changing consumption patterns and new food trends are a complex phenomenon, with still many unanswered questions. Therefore, a high level of vigilance for potential risks (the presence of microbiological hazards, chemical hazards, allergens, etc.) associated with changing consumption patterns is needed. In addition, consumers need to be informed correctly about possible risks even of 'natural' products and biomaterials. This symposium was a clear signal that a forward-looking policy closely following these new developments is needed, with the aim of safeguarding the food and protecting the health of consumers.

The complete proceedings and presentations of the 15th symposium can be consulted at the website of the Scientific Committee of the FASFC at <http://www.afsca.be/scientificcommittee/symposia/>