Recent microbiological risk assessments by the Scientific Committee of the Federal Agency for the Safety of the Food Chain

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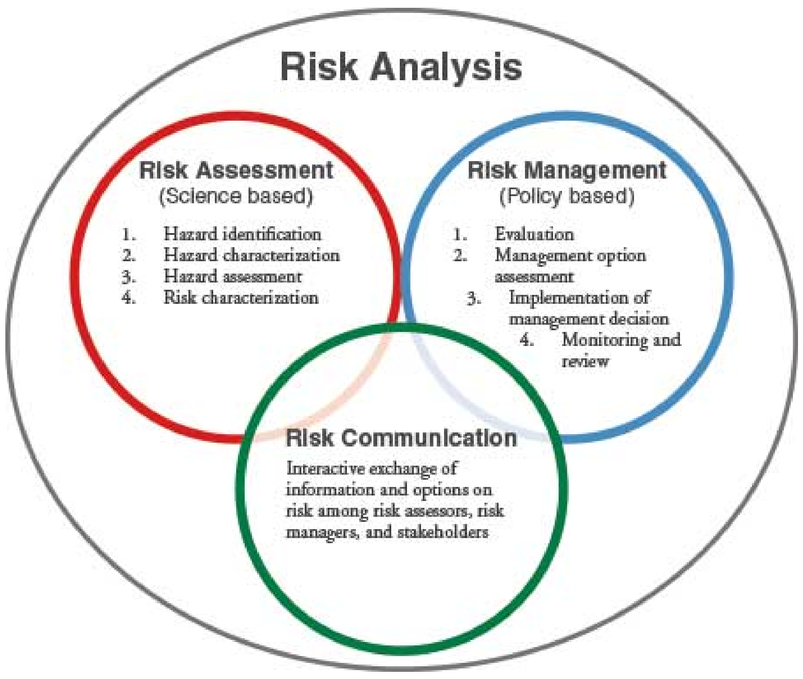
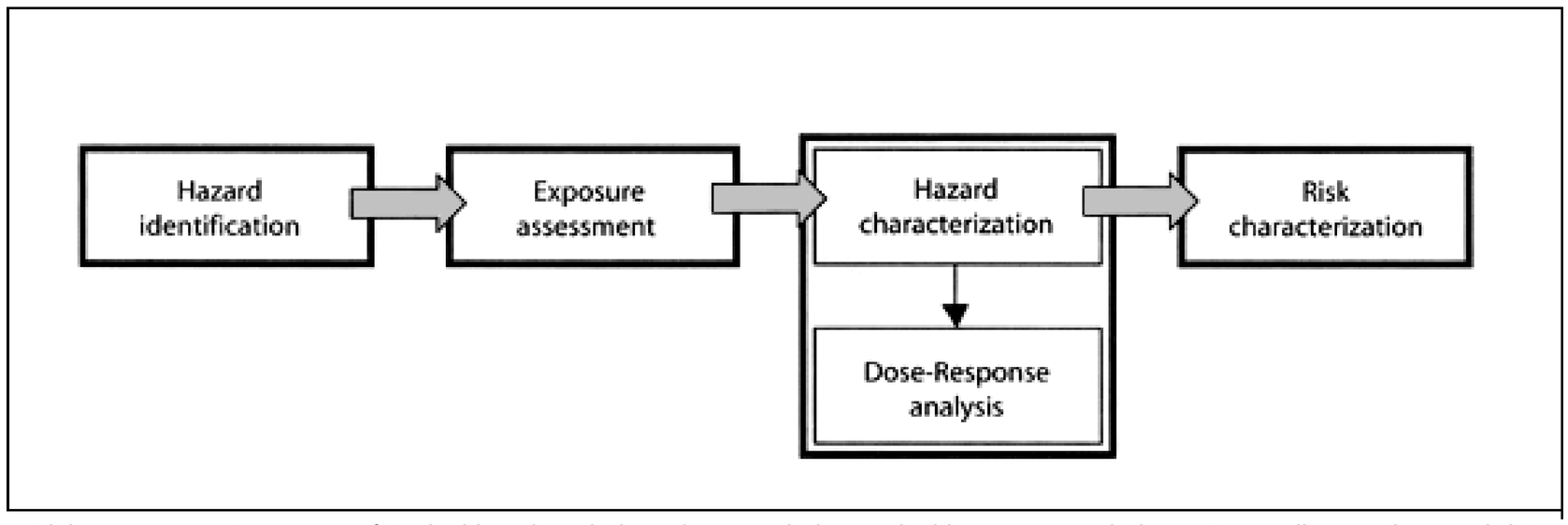
Introduction

The Scientific Committee (SciCom) is a consultative body of the Federal Agency for the Safety of the Food Chain (FASFC). It occupies a central position in the risk assessment of the FASFC. The Committee is composed of 22 members with complementary expertise nominated by Royal decree for a mandate of 4 years. The main task of the SciCom is to provide independent scientific opinions on the matters related to the competencies of the FASFC. Opinions are given upon request of the Chief Executive Officer of the FASFC, upon request of the Federal Minister who has food safety within its competencies or may result from self-tasking initiatives (Vromman *et al*., 2015).

Risk assessment methodology

•For most of its scientific opinions dealing with microbiological risk assessment, the methodology applied by the SciCom is based on a multidisciplinary and structured international accepted approach as put forward by the European Commission (EC), European Food Safety Authority (EFSA), the Codex Alimentarius and the Food and Agriculture Organization of the United Nations (FAO)/World Health Organization (WHO).





•Risk assessments are completed with a description of uncertainties and with recommendations. Depending on time and data constraints, risk assessments are carried out in a flexible and pragmatic way and may be either qualitative, semi-quantitative or quantitative (deterministic or probabilistic). Data are used from the FASFC databases, (inter)national food consumption databases, external EU or EFSA databases or from universities and scientific institutions. Data are further analyzed with suitable methods and software tools such as predictive growth models, statistics, R and @Risk. Expert opinions are obtained through knowledge elicitation of experts in working groups, hearings, electronic questionnaires or Delphi surveys.

Recent (2014-2015) opinions on microbiological risks

Food safety of the short supply chain – SciCom opinion 05-2014. Sufficient attention must be drawn to the control of *Listeria monocytogenes* in the short supply chain. There is room for improvement in quality and hygiene (Verraes *et al*., 2015a).

Food safety aspects of insects intended for human consumption (in cooperation with the Belgian Superior Health Council) – SciCom opinion 14-2014. The microbiological hazards depend on insect species, cultivation conditions and subsequent processing. A heating step before consumption is indispensable (Claeys *et al*., 2015).

Evaluation of the microbiological risks of the consumption of dairy products based on raw milk – SciCom opinion 02-2015. The risks of raw dairy products (especially (semi-)soft cheeses) in Belgium are mainly linked to *Listeria monocytogenes*, human pathogenic *E. coli*, *Staphylococcus aureus*, *Salmonella* and *Campylobacter* (Verraes *et al*., 2015b).

Evaluation of the microbiological stability of rice cakes after baking – SciCom opinion 03-2015. With the aid of growth simulations of pathogenic microorganisms that can occur in rice cakes, it is estimated that the risk of the storage of rice cakes for more than 12 hours is mainly determined by the specific ambient temperature with an increased risk at a temperature above 22 °C.

Evaluation of the risks of freezing prepackaged foodstuffs on the final use by date – SciCom opinion 05-2015. The risks of freezing prepackaged foodstuffs on the final use by date are low from a food safety point of view. The cold chain must be respected and the necessary measures have to be taken in order to freeze the foodstuffs and to reach freezing temperatures into their core as soon as possible.

Risk assessment of the conservation at ambient temperature of prepared rice and sushi – SciCom opinion 08-2015. The most important microbiological hazards linked to sushi are *Salmonella*, human pathogenic *E. coli*, *Vibrio* spp., *Staphylococcus aureus*, *Listeria monocytogenes* and *Bacillus cereus*. The risk of certain conservation times of prepared rice and sushi depends on the further distribution possibilities of the sushi.

Evaluation of the microbiological risks of a non-cooled storage of sandwiches – SciCom opinion 10-2015. The additional risk arising as a result of the storage of sandwiches at 13 °C during 3 hours is low if the sandwiches are kept thereafter maximum during 4 hours at ambient temperature, except for sandwiches with fresh meat and meat preparations or fresh fish.

Conclusions

•Microbiological hazards in foods can be of immediate and serious concern to human health.
•Microbial contamination of food may occur during production, processing, storage and distribution of the food or may be the result of (unsafe) consumer handling.
•The severity of the risk depends on several factors such as the intrinsic characteristics of the pathogen, the characteristics of the product (pH, a_w, available nutrients, competing microflora, etc.), the production process, the exposure level and the immune status of the consumer.
•SciCom opinions on microbiological risks in foods can have a divergent scope varying from very specific questions related to food processing to the evaluation of emergent consumption habits.
•SciCom applies a fit-for-purpose risk assessment approach.

For further information please visit http://www.favv-afsca.fgov.be/scientificcommittee/ > Opinions

Ref.: **Claeys**, W., Van Huffel, X., Sindic, M., 2015. Voedselveiligheid van insecten: een stand van zaken. Food Science & Law 2015/2, 62-69. **Verraes**, C., Uyttendaele, M., Clinquart, A., Daube, G., Sindic, M., Berkvens, D., Herman, L., 2015a. Microbiological safety and quality aspects of the short supply chain: SWOT analysis of the Belgian case study. Brit. Food J. 117(9), 2250-2264. **Verraes**, C., Vlaemynck, G., Van Weyenberg, S., De Zutter, Daube, G., Sindic, M., Uyttendaele, M., Herman, L., 2015b. A review of the microbiological hazards of dairy products made from raw milk. Int. Dairy J. 50, 32-44. **Vromman**, V., Thiry, E., Herman, L., Van Huffel, X., 2015. Risk assessment by the Scientific Committee of the Belgian Federal Agency for the Safety of the Food Chain (FASFC). AECOSAN (Spanish Agency for Consumer Affairs, Food Safety and Nutrition) Sci. Com. J. No 21.