World Health Organization

Sound science for decision-making

www.who.int/foodsafety/chem/en/
www.who.int/foodsafety/micro/en/
www.who.int/foodsafety/biotech/en/

Scientific advice

Why is this important?

Sound scientific risk assessment needs to be the basis for informed policy development, and for prioritizing and implementing risk management measures to reduce or prevent foodborne diseases.

Why should WHO lead food safety issues?

WHO is in a unique position to provide independent international scientific advice.

For over 50 years, WHO, in collaboration with the Food and Agriculture Organization of the United Nations (FAO), has been the international source of scientific advice on matters related to chemical food safety and, more recently, to micro-biological hazards. The risk assessments form the basis for national and international decision-making on substances (chemicals and microorganisms) in food to protect the health of the consumer from unacceptable exposure to these hazards. The scientific advice provides the evidence base to identify appropriate preventive measures against foodborne diseases and promote human health as it links to our daily food consumption.

The advice of WHO and FAO also serves as the scientific basis of the international food safety standards developed by the Codex Alimentarius Commission, the intergovernmental organization established by WHO and FAO in 1963.

There has been an increasing demand in the amount and complexity of the scientific advice requested from WHO and FAO. This is also due to changing environmental factors such as:

- a dramatic increase in international food trade: food safety issues are becoming global, and no longer a problem of any individual country;
- changes in human behaviour/practice and technological advancement: unexpected and new food safety issues are emerging;
- climate change: changing temperatures and extreme weather can lead to changes in the occurrence of food pathogens as well as mycotoxins;
- increasing awareness of potentially interacting hazards;
- increasing awareness that risk–benefit considerations are often necessary for food.

What is WHO doing?

WHO and FAO continue to support Member States and Codex to manage the risk of hazards in foods, by holding technical consultations, workshops and related activities, which form the basis of FAO/WHO scientific advice.

Efforts have been undertaken to increase the transparency of the scientific advice provision process, as set out in the document: FAO/WHO Framework for the Provision of Scientific Advice on Food Safety and Nutrition (ftp://ftp.fao.org/docrep/fao/010/a1296e/a1296e00.pdf).

Easier access to existing risk assessments is now available through our respective websites, while efforts to effect further improvements continue.

Principles and methods to assess the health risk posed by foodborne hazards are being updated, to take account of new scientific knowledge.

New ways to facilitate rapid response to emerging food safety issues are being developed, for use alongside the established processes currently in use.

The Global Initiative for Food-related Scientific Advice (GIFSA) has been established by WHO and FAO to improve sustainability of the provision of scientific advice.

The mission of the WHO Department of Food Safety and Zoonoses is to lower the burden of disease from food and animals, focusing on industrialized and traditional production systems, and integrating prevention from farm to table. This work includes the provision of scientific advice, efficient standard setting, and clear communication in support of foodborne and zoonotic disease prevention and international efforts to food-related outbreak detection and response.

FOOD SAFETY AND ZOONOSES

www.who.int/foodsafety

The main focus of GIFSA is to establish a mechanism to facilitate the provision of funding for scientific advice activities. Contributions are accepted from governments, organizations and foundations in accordance with WHO and FAO rules. All resources provided through GIFSA will be allocated to activities in an independent and transparent manner, taking into consideration the criteria for prioritization of activities agreed by Codex, FAO and WHO and the specific needs of FAO and WHO Member States.

Activities

WHO organizes a variety of technical consultations and workshops to respond to the requests from member States directly or through Codex for scientific advice. These include:

- Joint FAO/WHO Expert Committee on Food Additives (JECFA): evaluates food additives; contaminants and naturally occurring toxicants; veterinary drug residues;
- Joint FAO/WHO Meeting on Pesticide Residues (JMPR);
- Joint FAO/WHO Expert Meetings on Microbiological Risk Assessment (JEMRA);
- *Ad hoc* expert meetings on urgent or emerging issues including:
  - melamine contamination
  - health risk of bisphenol A
  - application of nanotechnology in foods
  - GM foods
  - risk–benefit of chlorine-containing disinfectants in food production and processing
  - risk–benefit of fish consumption

Expected results

- develop the principles and methods for assessing the health risk of foodborne hazards;
- risk assessment of specific food hazards:
  - food additives, contaminants, pesticides, veterinary drugs
  - microorganisms (combination of pathogen and food commodity)
  - new and emerging issues
- provide guidelines and recommendations for hygienic practice and safe handling of foods.

Achievements to date

The outcome of the expert consultations and workshops are published and made available on our website (http://www.who.int/foodsafety/en/). These include:

Chemicals:
- evaluation of over 2500 food additives, 45 contaminants, 100 veterinary drugs: http://www.who.int/ipcs/publications/jecfa/en/index.html
- evaluation of over 250 pesticides: http://www.who.int/ipcs/publications/jmpr/en/

Microorganisms (pathogens):
- evaluation of over 10 specific pathogen/commodity combinations

Principles and methods:
- microbiological risk assessment
- chemical risk assessment

Latest key documents:

Guidance on setting of acute reference dose (ARfD) for pesticides

EHC239: Principles for modelling dose-response for the risk assessment of chemicals

EHC240: Principles and methods for the risk assessment of chemicals in food

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