



Food and Agriculture
Organization of the
United Nations



World Health
Organization

Joint FAO/WHO Expert Meeting on Microbiological Risk Assessment (JEMRA)

Call for experts and data on microbiological risk assessment on powdered formulae for infants and young children

FAO and WHO are looking to identify experts to contribute to the work of JEMRA in the area of microbiological risk assessment on powdered formulae for infants and young children¹.

In addition, FAO and WHO are requesting governments, the industry, academia, laboratories, and any other interested organizations and individuals to submit any available data and information that could contribute to the work.

Background

In response to the request for scientific advice from the Codex Committee on Food Hygiene, JEMRA has provided scientific advice related to the safety of powdered formulae for infants and young children since 2004. Past work has included the meetings and reports on *Enterobacter sakazakii* and other microorganisms in powdered infant formula (2004)², *Enterobacter sakazakii* and *Salmonella* in powdered infant formula (2006)³, *Enterobacter sakazakii* (*Cronobacter* spp.) in powdered follow-up formula (2008)⁴ and also the risk assessment tool for *Cronobacter sakazakii* in powdered infant formula⁵. These activities

¹ Powdered formulae – for the purpose of Code of Practice ([CXC66-2008](#)) includes all types of powdered formulae for infants and young children, including: powdered infant formulae, follow-up formulae, formulae for special medical purposes intended for infants as sole source of nutrition, human milk fortifiers, and formulae for special medical purposes for infants and young children, intended to partially replace or supplement breast milk, infant formulae or follow-up formulae.

² FAO and WHO. 2004. *Enterobacter sakazakii* and other microorganisms in powdered infant formula: meeting report. <https://openknowledge.fao.org/handle/20.500.14283/y5502e>

³ FAO and WHO. 2006. *Enterobacter sakazakii* and *Salmonella* in powdered infant formula: meeting report. <https://openknowledge.fao.org/handle/20.500.14283/a0707e>

⁴ FAO and WHO. 2008. *Enterobacter sakazakii* (*Cronobacter* spp.) in powdered follow-up formula: meeting report. <https://openknowledge.fao.org/handle/20.500.14283/i0453e>

⁵<https://www.fstools.org/esak/>

contributed to the development of the *Code of Hygienic Practice for Powdered Formulae for Infants and Young Children* (CXC 66 - 2008) ⁶.

Outbreaks and recalls associated with powdered formulae continue to occur across the globe caused by microorganisms such as *Clostridium botulinum*, *Cronobacter sakazakii*, *Bacillus cereus* (cereuride), *Salmonella* spp., *Clostridium perfringens* and *Staphylococcus aureus*. To address the issues and support a potential revision of the *Code of hygienic practice for powdered formulae for infants and young children* (CXC 66-2008), the fifty-fifth session of the Codex Committee on Food Hygiene (CCFH55) requested JEMRA to;

- i. conduct a risk assessment on spore-forming pathogens, including *Clostridium botulinum* and *Bacillus cereus*, in powdered infant formula;
- ii. update the existing risk assessment and scientific advice on environmental pathogens (e.g. *Cronobacter* and *Salmonella*); and
- iii. provide other relevant scientific advice that would inform recommendations on strengthened control measures across the production environment, covering all stages from primary production and packaging through to the reconstitution of the product, and including environmental monitoring programmes.

Scope and objectives of the meeting

The meeting will address but will not be limited to the following topics:

- Estimate the global burden of disease caused by pathogens (including their toxins) that is attributable to powdered formulae.
- Assess the prevalence and levels of contamination of powdered formulae with these pathogens from production to consumption.
- Identify potential contamination exposure routes for these pathogens in the powdered formulae from production to consumption.
- Conduct hazard identification and hazard characterization, including genetic/chemical profiles, virulence factors, dose-response relationships, and host susceptibility.
- Review the performance and suitability of analytical methods for detecting and characterizing these pathogens.
- Review and assess existing monitoring, surveillance and control programmes, and if possible, propose improvements to strengthen these programmes.
- Provide any relevant scientific information that would provide recommendations on strengthened control measures across the production environment, covering all stages from primary production and packaging through to consumer stage, and including environmental monitoring programmes.
- Conduct a risk assessment on spore-forming pathogens, including *Clostridium botulinum* and *Bacillus cereus*, in powdered infant formula.
- Update the existing risk assessment and scientific advice on environmental pathogens (e.g. *Cronobacter* and *Salmonella*).

⁶ https://www.fao.org/fao-who-codexalimentarius/sh-proxy/en/?lnk=1&url=https%253A%252F%252Fworkspace.fao.org%252Fsites%252Fcodex%252Fstandards%252FCXC%2B66-2008%252FCXC_066e.pdf

- Leverage the risk assessment to evaluate the risk reduction measures associated with various control measures, the suggestions on establishing microbiological criteria, sampling plans and any suggestions on indicator of process control.

CALL FOR EXPERTS

The assessment of applicants will start on: 15 March 2026

FAO and WHO are currently in the process of identifying experts to participate in the work of JEMRA in the area of microbiological risk assessment on powdered formulae. All applicants should meet the following general criteria:

- Advanced University/College degree in veterinary medicine, microbiology, food technology, food science, epidemiology, public health, or related fields
- Experience in food safety/risk analysis related to microbiological hazards in foods
- At least five years of experience in relevant fields
- Scientific publications in peer-reviewed journals, in particular, relevant publications within the most recent 10 years
- Good knowledge of the English language, both written and oral
- Evidence of leadership or invited participation in national or international scientific bodies, committees, and other expert advisory bodies pertinent to the scope of this work

Selection of experts

Applicants' curricula vitae (CV) will be reviewed based on the criteria listed above by a selection panel consisting of three or more individuals appointed by FAO or WHO. A small number of accomplished individuals will be invited to participate in the meeting(s) which is planned in the near future. Selected experts may be required to assist in the preparation of background papers and report drafts (in English). In selecting experts, FAO and WHO will consider, in addition to scientific and technical excellence, diversity and complementarities of scientific backgrounds, and balanced representation from geographic regions, including developing and developed countries, as well as gender. Unsuccessful candidates are not routinely notified.

Appointment of experts

Selected experts will be invited to contribute to the meeting only in their individual scientific capacity. An expert will not represent the government of country of which he or she is a citizen, or the institution with which he or she is associated. The experts designated will not receive any remuneration, however, where a physical expert meeting is held, travel costs, subsistence allowance and other related expenses will be the exclusive responsibility of FAO and WHO.

Applications

Interested applicants should submit their CV. The CV should include a description of education, relevant work experience, evidence of national or international expertise on the topic, including a list of peer-reviewed publications relevant to the factors indicated above (please do not include reprints in your submission unless specifically requested at a later date). Applicants must have a good working knowledge of English as correspondence and meetings will be in English only.

Before participating in any related activity, all the selected experts will be required to declare any potential interests associated with the subjects and substances that will be evaluated. Experts will be asked to

indicate, in writing, all interests (financial and intellectual) on their part or that of their spouse that may affect, or be perceived to affect, their scientific independence as experts, including one or more of the following conditions: employment (past or present) by any commercial enterprise or private or civil sector association; receipt of research or other study grants from such enterprises or associations; shareholdings in commercial enterprises active in fields related to food safety. Identification of an interest does not necessarily indicate a conflict nor automatically exclude an individual from participation. For example, as expert, it is expected that many, if not all, will be employed in some capacity related to the subject matter. These declarations must be completed and evaluated before a formal invitation will be issued. Declaration documents will be retained by the Joint Secretariat and a summary of declarations will be included in the report of the work. In addition, a confidentiality undertaking must also be completed prior to appointment to ensure proper handling of dossiers and proprietary information.

Deadline

Please submit nominations and CVs at your earliest convenience. Selection of candidates will begin on **15 March 2026** and will be completed when sufficient numbers of qualified candidates are identified.

Data submissions in response to the call for experts should be sent to

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CALL FOR DATA

For full consideration, data should be submitted by 15 May 2026

FAO and WHO desire that all relevant information and data for the JEMRA meeting(s) are considered and are thus issuing this international call to raise awareness about data needs and invite all interested parties to provide any relevant information/data, particularly data that may not be readily available in the public domain.

Objectives

The data will serve as inputs to the development of scientific advice which will guide the revision of the current Codex documents and elaboration of the appropriate texts. This call is aimed to obtain more globally representative data and information on the microbiological risk assessment on powdered formulae for infants and young children.

Request for relevant information

FAO and WHO want to ensure that relevant information/data are collected, and are requesting governments, the food industry, academia, consumer groups, laboratories, health care providers and any other interested organizations and individuals to submit any available data from public health surveillance and assurance programs related to the microbiological risk assessment on powdered formulae for infants and young children. These data may be published or unpublished. Reference should be made to related published studies, where applicable.

FAO and WHO also recognize that countries may be at different levels in the development of their monitoring programs and testing methods for pathogens and toxins and welcome information on the status, including challenges encountered.

FAO and WHO would like to indicate that responses are encouraged from all the countries for this call since significant new information is requested.

List of data and information requirements

Data and information on the following aspects are requested:

A. Sampling plans and testing methods for monitoring of spore-forming pathogens and environmental pathogens including bacterial toxins in powdered formulae

- name of country
- name of the control programme (sampling/testing plan)
- food commodity (e.g. infant formulae, follow-up formulae)
- step in the food chain (e.g. abattoir, processing, retail, etc.)
- purpose of the testing (e.g. domestic market, testing of imported products, testing for exportation (indicate the country where the product is exported to), testing to determine national baseline prevalence, targeted exploratory etc.)

- regulatory testing – Testing programs can be mandatory i.e. imposed by the competent authorities or non-mandatory (ex. Industry own testing programs). For each testing program, please indicate if they are mandated by competent authorities or not, and for regulatory testing if they are implemented by the competent authorities or by industry
- laboratory method for screening/confirmation – Provide the laboratory method(s) for isolation and confirmation of spore-forming pathogens, environmental pathogens and bacterial toxins
- analytical sample size – If available, provide the size (g or ml) of the analytical sample size
- number of samples per sampling period or per year – If available, provide number of the samples for each year or each sampling period (e.g. 1000 samples)
- microbiological criteria or other indicators of contamination
- action taken on positive samples – Provide information on actions taken by competent authorities on positive samples for spore-forming pathogens, environmental pathogens and bacterial toxins (e.g. recall, corrective actions, etc.)
- additional information website
- observations/challenges: any challenge in the design and implementation of your monitoring and testing programs for spore-forming pathogens, environmental pathogens and bacterial toxins

B. Foodborne outbreak and surveillance data related to spore-forming pathogens, environmental pathogens and bacterial toxins in powdered formulae

1) Foodborne outbreaks data:

- time of year and month in which the outbreak occurred
- whether the outbreak / cases were confirmed or suspected regarding the link between the food
- vehicle and the outbreak of human cases and how this was determined (e.g. laboratory confirmation, epidemiological investigation, etc.)
- number of cases, hospitalizations, and deaths associated with the outbreaks
- age and sex distribution of cases (e.g. range and median)
- individual host susceptibility characteristics of cases (e.g. nutrition, health and medication status, concurrent infections, immune status and previous exposure history or any other risk factors identified)
- the implicated product (if identified) and attributes of the product that may have been relevant in the occurrence of the outbreak
- level of spore-forming pathogens, environmental pathogens and bacterial toxins in the food attributed
- strains of pathogens and/or toxins in the food attributed
- origin (e.g. local, imported) of the food attributed
- place of exposure
- other information
- relevant links (articles, reports, websites, etc.)

2) Surveillance data on spore-forming pathogens, environmental pathogens and bacterial toxins in powdered formulae:

- the implicated products and its attributes, if any

- place of origin of food attributed
- level of pathogens and toxins in the product attributed
- strains/serotypes of pathogens and toxins in the food attributed source and points of exposure
- other information
- relevant links (articles, reports, websites, etc.)

C. Information about risk assessment related models and tools

- brief description of any qualitative and/or quantitative risk assessment models and tools developed and their outputs
- reference or links to models and tools described in scientific literature or any open platform.
- any model and tool for validation and quality control of the risk assessment
- exposure assessment related data
 - growth and survival of the related pathogens in powdered formulae
 - cross-contamination data during food processing, handling and preparation
- hazard characterization related data
 - dose-response model for different pathogens
 - feeding studies, animal studies in vitro and vivo studies
 - relative risk values of risk factors such as health status, genetic background, use of medications, demographic, social and behavioural traits, etc.

D. Other studies

To update hazard identification and characterization of spore-forming pathogens, environmental pathogens and bacterial toxins, recent studies about following information are requested. For examples:

- profiles of pathogens and toxins (e.g. genes, subtypes)
- genomic types including references to methodology used for typing of pathogens
- validation studies
- serotype distributions
- research on climate, weather, hydrology, geographical features and topology studies

Data provider: Please provide name, title and full contact details of the contact person for follow-up and further details, if needed.

Confidential and/or unpublished data

FAO and WHO recognize that some of the information and relevant data which are now required may be unpublished or of a confidential nature. With regard to unpublished information and data, this remains the property of the author for subsequent publication by the owner as original material. Unpublished confidential studies that are submitted will be safeguarded in so far as it is possible to do so without compromising the work of FAO and WHO. Specific issues relating to confidentiality should be discussed directly between the information and data owners and FAO/WHO. For these and other issues please contact FAO and WHO at the contacts provided.

Deadline

Please submit any relevant information electronically either via e-mail (if not too large) or on a USB stick, in any official United Nations language (English, French, Spanish, Arabic, Chinese, Russian), and with title and short description of the content in English, to the addresses below at your earliest convenience, but no later than **15 May 2026**.

Data submissions in response to the call for data should be sent to

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