

SESSION 6

DATA GENERATION AND USE IN CODEX PROCEEDINGS

*Introduction to Pathways for
Data Submission and Use in
Codex Scientific Advice
Processes by PICs*



Australian Government
Department of Agriculture,
Fisheries and Forestry



THE THIRD CODEX AND FOOD REGULATORY FORUM

FOR NORTH AMERICA AND THE SOUTHWEST PACIFIC

Supporting the Enhancement of Food Control Systems in the SWP Region

29 – 31 March 2026

Hilton Hotel, Denarau Island, Nadi - Fiji

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Outline

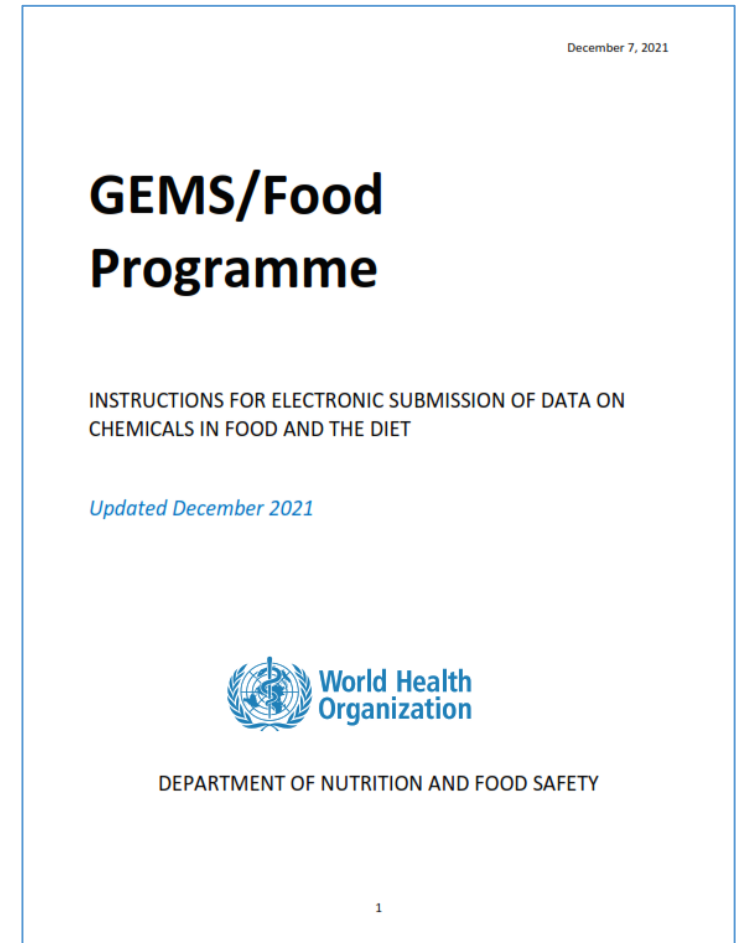
- 1. Introduction**
- 2. Registration and Login**
- 3. The GEMS/Food template**
- 4. Proposal for a National/Regional Food Occurrence Databases**
- 5. Conclusion**



Introduction

The **GEMS/ Food Database** is a **web-based system** to access and submit data on contaminants levels in foods.

The screenshot shows the GEMS/Food web interface. At the top, there is a blue header with the World Health Organization logo and the text "GEMS/Food". Below the header, there are two buttons: "Home Page" and "Search". A breadcrumb trail indicates "GEMS/Food Contaminants > Search". A yellow box labeled "Notes" contains the following text: "Please note that there is a limitation on the number of rows that can be exported in an excel file. You would not be able to export this limit you should do a new search **before exporting data in csv file** limited for example to certain regions or certain years". Below the notes, there is a search bar with a "Search" button, a "Reset" button, and a "Hide options" link. The "Search Criteria" section includes dropdown menus for "WHO Region(s)", "Contaminant(s)", "Food Category(s)", and "Food Name", all set to "All". There are also input fields for "Sampling period from:" and "to:" with calendar icons and "(yyyy)" labels.



<https://www.who.int/teams/nutrition-and-food-safety/databases/global-environment-monitoring-system-food-contamination>

Registration and Login

- ❑ **Data providers** should first register and create a WHO login (e-mail address) and password (e-mail should be sent to gems_food@who.int).
- ❑ The institution owning the data should provide the GEMS/Food administrator with contact details to have it listed as a collaborating institution.
- ❑ Once logged in to the database, the user will have access to the **Excel templates** for contributing data, that allow data providers to enter the national food classification and to map it with the WHO and/or the FoodEx2 classifications.

Registration and Login

□ Excel templates for contributing data:

- The “**Regular template**” allows data provider to enter the national food classification and to map it with both the WHO and the FoodEx2 classifications.
- The “**Bulk template**” allows data provider having already mapped the national classification with either the WHO or the FoodEx2 classification to enter data directly using one of the 2 coding system.

Food Mapping

- ❑ The **national classification** should be mapped with either the WHO or the FoodEx2 classification (The **local food identifier** consists of the name given to the food in the national database).

- ❑ The GEMS/Food code is based on a hierarchical classification with **2 levels**:
 - The first level (**WHO Food Group**) corresponds to 23 broad categories usually reported in food consumption surveys plus one category for feed.
 - The second level (**WHO Food Identifier**) corresponds to the detailed food descriptors used in the Codex Alimentarius Committees and to foods, processed or not, and analyzed as purchased or as consumed.

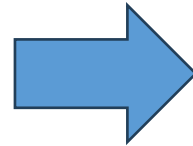
- ❑ The FoodEx2 code developed by EFSA and recommended for dietary exposure assessment **is already mapped with the WHO code.**

Food Mapping

Food Category(s): **All**

Food Name: Check all Uncheck all

- Alcoholic beverages
- Animal feed
- Cereals and cereal-based products**
- Composite food (including frozen products)
- Drinking water (water without any additives except carbon dioxide; includes water ice for consumption)
- Eggs and egg products



If no information on the detailed food category (e.g., "fruit") select a WHO Food Identifier similar to the WHO Food Group (e.g., Fruit and fruit product NES).

Food Category(s): **Cereals and cereal-based products**

Food Name: **All**

Filter: Check all Uncheck all

Buckwheat, Camellia, Quinoa

- Bread & other cooked cereal products
- Buckwheat
- CEREAL GRAINS
- Cereals and cereal-based products NES**
- Job's tears
- Maize

If the precise food name is not listed, the more generic sub-group listed in CAPITALS should be chosen.

Current fields in GEMS/Food template

| Column | Field | Field type /Drop-down menu | Mandatory or Optional | Flag language (proposed new or revised) |
|--------|------------------------------------|--|-----------------------|--|
| E | Local Food Identifier | Free text | Mandatory | Provide a <i>brief but descriptive</i> name of the food, such as “Orange roughy” (versus “Fish”) or “Polished/white rice” (versus “rice.”) |
| F | Serial no of the Record | Free text | Mandatory | One serial number is used for each sample. Data on different contaminants in the same sample should have the same serial number. National institutions should coordinate serial number selection to ensure numbers are informative and non-duplicative. |
| G | Submitting Country/Region/Observer | Drop-down menu <ul style="list-style-type: none"> • (List of countries, regions, observers) • Unspecified | Mandatory | Identifies country, region, or observer (region unspecified) submitting the data; this is not the country of production. If observer is not listed in dropdown menu, choose Unspecified and note name of Observer in Remarks. |
| H | Contaminant | Drop-down menu <ul style="list-style-type: none"> • (List of contaminants) | Optional | Please select a contaminant from the list. A contaminant is required, but manual entry in “Column H: Contaminant” is optional if a contaminant has been added on Worksheet 1: Start. If “multiple” is selected in Worksheet 1: Start, manual entry of contaminants in Field H is required. |
| I | Food Origin | Drop-down menu <ul style="list-style-type: none"> • Domestic • Imported • Mixed origin • Unknown | Optional | |
| J | Sampling Date | Free text (YYYY) | Mandatory | |
| K | Sample representative-ness | Drop-down menu <ul style="list-style-type: none"> • Random (routine) sampling • Targeted sampling • Unknown | Mandatory | Targeted sampling refers to targeted follow-up of specific findings of contamination. Random (routine) sampling refers to sampling that is not targeted and can include routine surveillance or sampling specific food types or importing countries. |
| L | Laboratory Identification | Free text | Optional | Laboratory that completed the analysis. |

Current fields in GEMS/Food template

| Column | Field | Field type /Drop-down menu | Mandatory or Optional | Flag language (proposed new or revised) |
|--------|--|---|--|---|
| M | Analytical Quality Assurance | Drop-down menu <ul style="list-style-type: none"> • Internal quality assurance and reference standards only. • Successful participation in relevant proficiency tests/interlaboratory comparisons during the sampling and analysis period. • Official accreditation for the relevant methods during the sampling and analysis period. • Unknown quality assurance of the lab. | Optional | |
| N | Measurement units for Contaminant Levels | Drop-down menu <ul style="list-style-type: none"> • mg/kg • µg/kg • ng/kg • pg/kg • Bq/kg | Mandatory | Check units carefully. Make sure units chosen from dropdown menu align with sample results. |
| O | LOD | Free text | Mandatory for results not quantified (i.e., non-detect) if LOQ is not provided. (Optional) | Enter a numeric value greater than 0 and less than LOQ. This field contains the limit of detection reported by the laboratory. LOD or LOQ are mandatory if non-detect is entered in Results (T). |
| P | LOQ | Free text | Mandatory for results not quantified if LOD is not provided. (Mandatory) | Enter a numeric value greater than 0 and LOD. This field contains the limit of quantification reported by the laboratory. LOD or LOQ are mandatory if non-detect is entered in Results (T). |

Current fields in GEMS/Food template

| Column | Field | Field type /Drop-down menu | Mandatory or Optional | Flag language (proposed new or revised) |
|--------|--|--|-----------------------|--|
| Q | Results based on | Drop-down menu <ul style="list-style-type: none"> • Fat content • Dry weight • As is (raw, fresh, as sold) • As consumed | Mandatory | |
| R | Portion analyzed | Drop-down menu <ul style="list-style-type: none"> • Edible only • Whole food (edible + inedible) | Mandatory | Example: shelled nut (edible) versus unshelled nut (whole food) |
| S | State of food analyzed (Cooked/Raw) | Drop-down menu <ul style="list-style-type: none"> • Cooked • Raw • Unknown | Optional | Example: raw fish versus cooked fish |
| T | Results | Free text | Mandatory | Entering a result is mandatory: either a zero, non-detect, or a numeric result. Zero or non-detect can be entered only if LOQ or LOD are provided. |
| U | Individual vs Aggregated data | Drop-down menu <ul style="list-style-type: none"> • Individual • Aggregated | Mandatory | |
| V | Confidentiality of Data | Drop-down menu <ul style="list-style-type: none"> • Yes • Blank | Optional | All data for which "blank" is chosen or no option is selected will be considered as non-confidential in data handling and analysis. |
| W | Remarks/References | Free text | Optional | |
| X | Year of production/harvest | Free text (YYYY) | Optional | |
| Y | Compositional information | Free text | Optional | Information from labels or as determined analytically such as major ingredients, fat content, water content, or percent total cocoa solids. |
| Z-1 | Country/Region of Production of Finished Product | Menu <ul style="list-style-type: none"> • Unknown • Countries/Regions (A-Z) | Optional | |

Current fields in GEMS/Food template

| Column | Field | Field type /Drop-down menu | Mandatory or Optional | Flag language (proposed new or revised) |
|--------|---|--|-----------------------|--|
| Z-2 | Country/Region of Origin of Raw Materials | Menu <ul style="list-style-type: none"> • Unknown • Countries/Regions (A-Z) | Optional | |
| AA | Product type | Menu: <ul style="list-style-type: none"> • Destined for further processing • Ready to eat • Not applicable • Unknown | Optional | “Destined for further processing” and “ready to eat” are defined for certain contaminants and commodities in the <i>Codex General Standard for Contaminants and Toxins in Food and Feed, CXS-193</i> . See paragraph 48 below. |
| BB | Sampling location in production chain | Menu: <ul style="list-style-type: none"> • Unknown • Production site • Bulk lot transport • Border (import/export) • Market/Retail • Other | Mandatory | Provides information on where the sample was obtained in the production chain. |
| CC | Principle of method of analysis | Menu <ul style="list-style-type: none"> • Method A • Method B • Method Z • Other • Unknown | Optional | |

GEMS/Food Database



GEMS/Food

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Search

GEMS/Food Contaminants > Search

Search Criteria

WHO Region(s): Sampling period from: (yyyy)

Contaminant(s): to: (yyyy)

Food Category(s):

Food Name:

Search Results

[Export to file \(csv\)](#) | [Print](#) | [Get link to this search](#) | [Email this search](#)

| Record Type | Region | Contaminant | Food Group | WHO Food Identifier | WHO Food Code | State of food analysed | Result | Units | LOD | LOQ | Year Sample | Sample representativeness (or reliability) | Lab identification | Food origin | Analytical quality assurance | Results based on |
|-------------|--------|-------------|--------------------------|---------------------|---------------|------------------------|--------|-------|------|-------|-------------|--|--------------------|-------------|------------------------------|------------------|
| Individual | PAHO | Abamectin | Fruit and fruit products | Avocado | FI 0326 | Raw | ND | mg/kg | 0.01 | 0.011 | 2015 | Random sampling | 8 | Imported | Officially accredited | As is |
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| Individual | PAHO | Abamectin | Fruit and fruit products | Avocado | FI 0326 | Raw | ND | mg/kg | 0.01 | 0.011 | 2015 | Random sampling | 8 | Imported | Officially accredited | As is |

GEMS/Food Database

- Prior to upload, the data submitter should review the file carefully for errors.
- During upload, the data file is scanned to identify problems before writing data into the database. The data submitter is responsible for correcting errors and re-submitting the template.
- Datasets can be rejected for a variety of reasons, some of which are listed below:
 - Reported result < LOD, missing LOQ or LOD when result is non-detect, reported LOD > LOQ
 - Dates entered in the wrong format
 - Mandatory fields incomplete
 - Duplicate entries in the current worksheet or in the database
- **The GEMS/Food database administrator can be contacted for assistance.**

Proposal for a National/Regional Food Occurrence Databases



Arab Food Occurrence Database

Supporting Food Regulatory Science in the Arab Region

About the Database

The investment in data availability to support food regulatory measures is one of the key elements of the mandate of the Global Food Regulatory Science Society (GFoRSS). The availability and accuracy of occurrence data are crucial for the development of sound and substantiated food regulatory decisions, as data forms the backbone of the risk analysis process.

Similarly, contributing to the development and adaptation of international food standards requires a robust set of occurrence data that reflect the local, national, or regional



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