

REPORT

ILSI SEA Region & ASEANFOODS FOODCOMP Training Course 2018: Development and Evaluation of Quality Food Composition Database 3-7 September, 2018, Yangon, Myanmar

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The ASEANFOODS Network is dedicated to the continuous contribution of knowledge and information towards improving food and nutrition security and achieving sustainable diets. The task can be successful through promoting and supporting the development of national and regional food composition databases (FCDBs), and ensuring that they are maintained at a high standard and are accessible to all users. The Network has been working in collaboration with INFOODS since 1986 with support from JICA, AusAID, FAO, ILSI-SEA, NIF and UNU to reach this common goal. The first FoodComp-ASIA course was organised in Bangkok, Thailand in 2002 for three weeks, with the objectives to demonstrate the effective ways for FCD generation, compilation and uses and how the data generators, compilers and users collaborate each other to develop good quality FCDB. To make the course more effective and fit to practical purposes, time and budget, the 3-week FoodComp course in Australia and the original course in Wageningen, the Netherlands, was reduced to two weeks in 2009 and became 5-day course in 2016 and continued in 2017.

To follow the same strategy, a 5-day national FoodComp course to develop national food composition database (FCDB) was organised during 3-7 September 2018 in Myanmar, with the financial support from ILSI.

Scope of the training:

To develop quality FCDB, the course covers the main elements of the whole process in developing the national FCDB which includes nutrients and food selection, sampling, food composition data (FCD) generation, compilation, and uses, quality control and quality evaluation at all main steps. At the end of the developing process, a strategy and guidelines to develop food composition databases as a hard copy and online FCDB were given. The details of 5-day activities are shown in the programme of the FoodComp training course, appended to this report.

Participants:

Nineteen professionals from various food/nutrition specialties and representing different sectors participated in the training. Fifteen participants were from Myanmar: nine from Department of Medical Research, three from Department of Public Health, Ministry of Health and Sports (MOHS), and two from FDA. In addition, there were two participants from Laos and two from Cambodia. The food composition-related specialties were represented as follows: four were solely data generator; nine were data compilers and users; five were data generators, compilers and users; and one was solely a data user. None of the participants from Laos and Cambodia had experience in food analysis.

Status of laboratories in Myanmar:

Available instruments: hot air oven, muffle furnace, protein digestion and distillation units and Soxhlet extraction system; flame atomic absorption spectrophotometer (AAS), Inductively coupled plasma optical emission spectrometer (ICP-OES), gas chromatography (GC) with capillary column and high performance liquid chromatography (HPLC).

Nutrient analyses: at present, the nutrient analyses conducted at the Ministry of Health and Sports (MOHS) are proximate composition, a range of minerals, and fatty acids (with packed column GC). In July 2018, two staffs from Department of Medical Research attended 2-weeks hand-on training on vitamin B1, B2, and vitamin A analyses using HPLC at Institute of Nutrition, Mahidol University (INMU). They are going to set up these vitamins in the near future. Gas chromatography (GC) with capillary column was available recently for a number of analyses, including to achieve better resolution for fatty acids.

At present, ICP-OES for multi-mineral analysis has been used for toxic element analysis at different building (Toxicology laboratory) but under MOHS.

RECOMMENDATION

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1. Laboratory and analytical systems:
 - 1.1 Laboratory arrangement for protein determination: for safety consideration, the instrument for digestion, distillation and titration should be set up in the same room or in the same floor.
 - 1.2 Total lipid analysis: the analysis protocol should include acid or alkali (dairy products) hydrolysis prior to solvent digestion, especially for foods of plant origin and mixed diets. Equipment and glassware for the hydrolysis of the food sample must be set up.
 - 1.3 For good quality national food composition database (FCDB) development, the principle of the ISO 17025 standards should be implemented throughout the process.
 - 1.4 Quality control system should be applied for all steps of nutrient analysis. An intensive training course on internal and external QC systems including statistical evaluation is required.
 - 1.5 Laboratories assessment for the current analyses by experts should be urgently conducted.
 - 1.6 A training on laboratory safety must be organised.
2. Collaboration:

Available high technology Instrument, i.e., ICP-OES, ICP-MS which are used for multi-minerals analyses and well trained staff are distributed at different sections or organisations. The staff of those organisation participated in the FoodComp training course, they realised the possibility to strengthening the facilities and resources for development of the national FCDB. Collaboration among intra- and inter-organisation is strongly recommended.
3. National FCDB development:

Strategic plan, which include roles of intra- and inter-collaboration, for development of national FCDB must be developed.

Activities on development of national FCDB should be set up as priority under the limit time frame. Based on the knowledge gained from the training, the process on FCD compilation of the available analytical data should get start as soon as possible.

A national network of food composition professionals, including users, to provide recommendations of key foods, core nutrients, etc. should be established.
4. If the development of national FCDB will include data from recipe calculation, a specific training on recipes calculation is strongly recommended.
5. Food composition activities should contribute to achieving globally agreed goals and targets, including the Sustainable Development Goals (SDG). Data collection and nutrient analysis of traditional, neglected/underutilised native food species and varieties (SDG 2 and Aichi biodiversity targets) should be emphasised.