THAIFOODS WORKSHOP 2017: DEVELOPMENT OF NATIONAL FOOD COMPOSITION DATABASE

Institute of Nutrition, Mahidol University Putthamonthon 4, Nakhon Pathom 73170, THAILAND	28 Aug 2017 – 1 Sept 2017

Session	Programme
1	INTRODUCTION Organisation and activities related to food composition database development: international, regional and national level
2	Conceptual framework for FCDB development
3	Strategic plan for developing national FCDB
4	Sample handling and sample preparation
5	Food composition data generation I: Analysis of nutrients - proximate composition, minerals, vitamins, fatty acids, cholesterol, sugars)
6	Food composition data generation II: laboratory quality control system (internal and external) Application of ISO 17025, 17034, 17043, 13528 to quality assurance programme on FCDB development
7	Development of national food composition database
7.1	FCD compilation I: Archival FCDB and quality checking
7.2	FCD compilation II: Reference FCDB
7.3	FCD compilation III: User FCDB
7.4	Systematic checking of user FCDB before publication: INFOODS Guidelines
7.5	Preparation of National FCDB
8	Quality assessment of national FCDB/FCTs
9	Uses of FCDB
10	Course evaluation and Closing

Lecturers/resource persons:

Assoc. Prof. Prapasri Puwastien

Assoc. Prof. Nipa Rojroongwasinkul

Assoc. Prof. Kunchit Judprasong

Ms.   Nuntaya Jongjaithet

Mr.   Piyanut Sridonpai

THAIFOODS WORKSHOP 2017
DEVELOPMENT OF NATIONAL FOOD COMPOSITION DATABASE

Time	Programme	Lecturer
Monday, 28 August 2017		
Session 1. Organisation and activities related to food composition databases (FCDB) development		

09.00-10.30 1.5 h	INTRODUCTION
	 • **General characteristics of foods in different food groups**
	 • Organisation and activities related to FCDB
	    - International networks (INFOODS) and website
	    - Regional level (ASEANFOODS and website)
	    - National level - THAIFOODS
		Prapasri, Kunchit

10.30-10.45	Morning break	
Session 2. Conceptual framework for FCDB development		
10.45-11.45 1 h	Overall process and quality awareness in systematic development of FCDB	Prapasri
11:45-13.00	Lunch break	
Session 3. Strategic plan for developing national FCTs/FCDB		
13.00-14.15 1 h, 15 min	3.1 Selection and setting priority of foods and nutrients to be analysed	Nipa, Piyanut Prapasri
14.15-15.30 1 h, 15 min	3.2 Sampling plan, sampling and sample handling for developing a national FCDB and case study	Prapasri, Kunchit, Piyanut, Nunthaya
15.30-15:45	Afternoon break	
15.45-16.15 30 min	3.3 Photography of food samples	Kunchit, Piyanut
16.15-16.30	Questions & Answers	All lecturers
Tuesday, 29 August 2017		
Time	Programme	Lecturer
Session 3. Strategic plan for developing national FCTs (cont.)		

09.00-10.30 1.5 h	3.4 Experimental design for developing related information factors:
	    - density
	    - edible portion
	    - yield factor (cooked food)
	    - nutrient retention factor (cooked food)
	    - fat loss and gain (fried food)
		Prapasri, Piyanut, Nipa

10.30-10.45	Morning break	
Session 4. Sample handling and sample preparation		
10.45-11.45 1 h.	**Food sample before analysis – at laboratory** 4.1 Detailed information of food samples to be recorded: each food groups and products (NL)	Kunchit, Prapasri, Radon
11.45-13.00	Lunch break	

Tuesday, 29 August 2017 (cont')		
Time	**Programme**	**Lecturer**
Session 4. Sample handling and sample preparation		
11.45-13.00	Lunch break	
13.00-15.00 2 h.	Sample preparation and storage: • single and multiple composite samples; • general process for solid, liquid, fresh, mixed foods, lyophilised foods • specific process for foods from different food groups • specific process for foods with different objectives (food products for nutrition labelling - NL)	Kunchit, Prapasri Radon
14:30-14.45	Afternoon break	
14.45- 16:15 1.5 h	Discussion; Questions & Answers	All lecturers

Wednesday, 30 August 2017		
Session 5. Food composition data generation I: **Analysis of nutrients**		
Analysis of nutrients: Review and discussion, some tips and awareness		
09.00-10.30 1.5 h	Main nutrients and energy: proximate composition, dietary fibre (Calculation: total and available carbohydrate, energy) Minerals: AAS, ICP and other methods	Kunchit, Prapasri
10.30-10.45	Morning break	
10.45-12.00 1 h, 15 min.	• Sugars • Fatty acids and cholesterol • Vitamins: fat soluble and water soluble	Kunchit, Prapasri
12.00-13.00	Lunch break	
Session 6. Food composition data generation II **laboratory quality control system**		
13.00-14.15 1 h 15 min.	**6.1 Internal quality control (QC) systems in food analysis laboratory and criteria of acceptance** Repeatability and reproducibility In-house quality control (QC) sample, quality control chart and its use to demonstrate good performance in precision **6.2 External quality control system:** Proficiency testing scheme (as a participating laboratory	Kunchit
14.15-14:30	Afternoon break	
14.30-15.00 30 min	**6.3 Application of International standards** (ISO 17025, 17034, 17043, 13528) to quality assurance programme on FCDB development	Kunchit, Prapasri

Wednesday, 30 August 2017		
Session 7. Development of national food composition database		
7.1 Food composition data compilation I: Archival FCDB and quality checking		

15.00-16.30
1 h, 30 min.
	General food composition issues
	• Data sources: analysed (Lab report, published paper, NL, theses, etc), _calculated, borrowed_
	• Food identification: food names and description, food group
	• Components identifier: INFOODS Tagnames
	• Component conventions and expression:
	  - Units and denominators,
	  - Significant figures and number of decimal places
	• Rounding procedure/rounding rules (NL)
	• Conversion factors: _protein, energy, fatty acids, vitamins_
	• Characteristics that influence the nutrient content of foods
		Prapasri, Kunchit, Piyanut

Thursday, 31 August 2017		
Session 7. Development of national food composition database		
7.1 Food composition data compilation I: Archival FCDB and quality checking		
09.00-10.30 1 h, 30 min	**Preparation of archival FCDB** • INFOODS food composition database template • Original FCD: information and quality checking Evaluation of data quality using EuroFIR Guidelines – Selenium content of Thai foods. Prapaisri P. Sirichakwal*, Prapasri Puwastien, Jarupun Polngam, Ratchanee Kongkachuichai. Journal of Food Composition and Analysis 18 (2005) 47–59 • Preparation of archival food composition database (FCDB)	Prapasri, Piyanut
10.30-10.45	Morning break	
7.2 FCD compilation II: Reference FCDB		
10.45-12.00 1 h, 15 min	**Preparation of reference FCDB**: step-by-step • Transfer FCD sets to a new sheet (reference) • Arrange FCD sets to the designed food group • Aggregate data sets of the same food • Check data for correctness and quality Data transformation • Statistical evaluation of aggregated FCD to identify unaccepted data • Checking each nutrient of each data Preparation of final reference FCDB (calculate CHOAVLDF/CHOCDF, ENER)	Prapasri, Piyanut
11.30-13.00	Lunch break	

Thursday, 31 August 2017 (*cont.*)		
Session 7. Development of national food composition database		
7.2 FCD compilation II: Reference FCDB (*cont.*)		
13.00-14:30 1 h, 30 min	Demonstration/Practice: Archival (data from NL) and reference file preparation (data sets from cereal and milk groups)	Prapasri, Piyanut
14.30-14.45	**Afternoon break**	
7.3 FCD compilation III: User FCDB		
14:45-16.30 1 h 45 min.	**Preparation of user FCDB** • Move aggregated FCD from reference FCDB to a new sheet • INFOODS and THAIFOODS food composition database format • Preparation of user database file	Prapasri, Piyanut

Friday, 1 September 2017		
Time	**Programme**	**Lecturer**
Systematic checking of user FCDB before publication		
09.00-10.30	Checking of FCD/FCDB before publication: FAO/INFOODS Guidelines – Version 1.0	Prapasri, Piyanut
10.30-10.45	Morning break	
10.45-12.00 1 h, 15 min	Preparation of FCDB as a hard copy and electronic version	Prapasri, Kunchit, Piyanut
12.00-13.00	Lunch break	

Session 8. Quality assessment of national FCDB		
13.00-14.00 1 h	Quality assessment of national FCDB using INFOODS/ASEANFOODS Guidelines	Kunchit, Prapasri
Session 9. Uses of FCDB		
14.00-15.00 1 h	Tips and awareness in using FCTs/FCDBs	Prapasri, Nipa
15.00-15.30 30 min	Afternoon break	
15.30-16.30 1 h	Questions & Answers	All lecturers
	Course evaluation and Closing	All lecturers