

Thailand Network of Food Data System (THAIFOODS)

Kunchit Judprasong, Prapasri Puwastien

Institute of Nutrition, Mahidol University, Putthamonthon 4, Salaya, Nakhon Pathom 73170, Thailand

THAIFOODS Committee: Prapasri Puwastien (data generator & compiler), Kunchit Judprasong (data generator & compiler), Piyanut Sridonpai (data compiler); Pongtorn Sungpuag (data generator); Uraiporn Chittchang (data user & programme developer); Orapin Banjong (data user & programme developer); Nipa Rojroongwasinkul (data user & programme developer); Prapaisri P Sirichakwal (data user); Wantanee Kriengsinyos (data user); Chayanit Wanijjakul (statistician and FCD programmer); Amnat Somjai (Website programmer)



Background

THAIFOODS was established in 1986, in line with the goals of ASEANFOODS and INFOODS, to develop an efficient system for the generation, compilation and dissemination of a Thai national food composition database (FCD). The Institute of Nutrition, Mahidol University (INMU) has been the Coordinating Centre. At that time, the available Thai FCTs (Thai version) comprised composition data for a limited number of foods and nutrients and there was limited knowledge and experience of the systematic development of FCD.

Improve evidence basis, programme implementation and success

1. THAIFOODS: Since 1986, THAIFOODS has organised workshops and training activities on quality control systems, laboratory performance studies and development of food reference materials leading to the Thai FCTs-1999 (English version). In 2002 THAIFOODS on behalf of ASEANFOODS organised FoodComp-Asia course in Thailand and a similar course was conducted for Myanmar in 2013. To strengthen the coordination, a section of the Food Composition Database was set up at INMU in 2007. Currently, a new centre, "Food Database Development Centre for Promoting Health and Food Trade" is under consideration by Mahidol University. Moreover, THAIFOODS hosted the 8-IFDC in Bangkok in 2009.

2. Thai Food Composition Tables (FCTs): The FCTs-1999 comprised mainly FCD analysed at INMU and some data from THAIFOODS member laboratories, previous FCTs, journals, theses, and reports. The

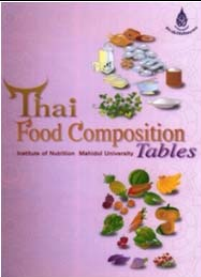
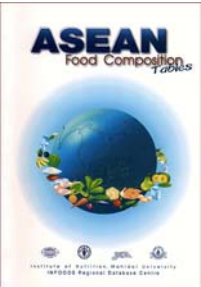
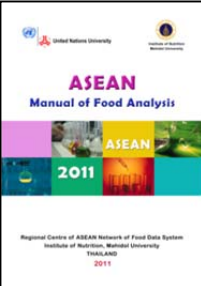


2015 INFOODS Success Story Prize



FCTs included about 1000 food items, with data for each on energy and a maximum of 22 nutrients. The Thai FCD was included in the first “ASEAN FCTs-2000”. The online ASEAN FCTs of selected foods was developed and made available on the INMU website in 2014. From 2007 to present new food items, with nutrients including fatty acids and nutrients missing in previous FCTs, were systematically analysed, with limited budget assistance from Mahidol University. The second version of the Thai FCTs, covering about 1700 food items, is being developed following FAO/INFOODS Guidelines and will be available in September 2015.

3. FCD uses and applications: The Thai FCD have been used for teaching, training, research and trade. The FCD was incorporated in INMUCAL-Nutrients calculating programme. It has been used nationwide and in neighbouring countries for evaluating national nutrient intake, particularly in the 2 National Food Consumption Surveys and for formulating recipes by food manufacturers. Since 2005, application programmes with specific objectives have been developed and licensed: Thai School Lunch (available online for free use); INMU-RecipeCal; and INMU-Menu-Plan. A new FCD application programme, INMU-Menu Development is being developed.

4. Strengthening the performance of food analysis laboratories: Several training and hands-on workshops on internal and external quality control systems have been conducted by THAIFOODS at national and regional levels. Between 1989 and 2015, twelve rounds of laboratory performance testing (PT) for nutrient analyses were conducted and eight food reference materials with different matrices were developed. Six PT out of the 12 included testing of mandatory nutrients for nutritional labeling. These PTs have progressively improved the analytical performance of the participating laboratories and contributed to their ISO 17025 and ISO 17043 accreditations.


References of THAIFOODS success story

Reference	Source
Books:	
1) Puwastien P, Raroengwichit M, Sungpuag P, Judprasong K. Thai Food Composition Tables, First edition, 1999. Institute of Nutrition, Mahidol University, Thailand.	
2) Puwastien P, Burlingame B, Raroengwichit M, Sungpuag P. ASEAN Food Composition Tables, First edition, 2000. Institute of Nutrition, Mahidol University, ASEANFOODS Regional Database Centre of INFOODS, Thailand.	
3) Puwastien P, Siong, TE, Kantasubrata J, Craven G, Feliciano RR, Judprasong K. ASEAN Manual of Food Analysis 2011. Institute of Nutrition, Mahidol University, Thailand.	
4) Thai Food Composition Tables, 2015 (In preparation, will be available in September 2015)	
FCD Application programmes:	
1) INMUCAL-Nutrients	
2) INMUSchoolLunch Program	http://www.sizethailand.org/lunch2/ 





FCD Application programmes: (Continued)	
3) INMU-MenuPlan Program	
4) INMU-RecipeCal Program	
FCDB websites:	
Online ASEAN Food Composition Database 2000	http://www.inmu.mahidol.ac.th/aseanfoods/composition_data.html
Online ASEAN Manual of Food Analysis 2011	http://www.inmu.mahidol.ac.th/aseanfoods/publication.html
Online Thai Food Composition Database 2015 (Under construction)	http://www.inmu.mahidol.ac.th/thaifcd/home.php
Publications: international journals	
<ol style="list-style-type: none"> Judprasong K, Puwastien P, Boonpor J, Pinprapai N. Laboratory performance on analysis of mandatory nutrients and preparation of nutrition labelling. <i>Food Chemistry</i>. 2013;140:598–607. Puwastien P, Judprasong K, Pinprapai N. Development of rice reference material and its use for evaluation of analytical performance of food analysis laboratories. <i>J Food Compos Anal</i>. 2009;22:453–462. Puwastien P, Pinprapai N, Judprasong K, Tamura T. International inter-laboratory analyses of food folate. Article in Press, <i>Journal of Food Composition and Analysis</i> 2005;18:387-397. Puwastien P. Issues in the development and use of food composition database. <i>Public Health Nutrition</i> 2002;5(6A):991-999. Puwastien P. Food composition programme of ASEANFOODS 1995-1999. <i>J Food Composition and Analysis</i> 2000;13:659-67. Puwastien P, Nitithamyong A, GA Attig. Activities of the ASEANFOODS Network of Food Data System (ASEANFOODS). <i>Food Chemistry</i> 1996;57:179-81. 	
Publications: national journals	
<ol style="list-style-type: none"> Boonpor J, Judprasong K*, Puwastien P. Evaluating laboratory performance on analysis of mandatory nutrients for nutrition labeling. <i>KKU Res J</i>. 2014; 19(3): 463-484. Boonpor J, Judprasong K*, Puwastien P, Sirichakwal PP. Evaluation of the reliability of nutrition information on food package of processed foods. <i>J Nutr Assoc Thailand</i>. 2013; 48(1): 1-10. 	
Reports:	
<ol style="list-style-type: none"> Judprasong K, Puwastien P, Suppanuwat J, Jittinandana S, Pinprapai N. Laboratory performance study 11: Analysis of mandatory nutrients and preparation of nutrition labelling. Final report; 2014 December. Judprasong K, Puwastien P, Boonpor J, Pinprapai N. Laboratory performance study 10: Analysis of mandatory nutrients and preparation of nutrition labelling. Final report; 2012 May. Judprasong K, Puwastien P, Boonpor J, Pinprapai N. Laboratory performance study 9: Analysis of mandatory nutrients and preparation of nutrition labelling. Final report; 2010 Aug. Puwastien P, Judprasong K, Pinprapai N. Laboratory performance study VIII: Analysis of nutrients and non-nutrients in rice samples. Final report; 2006 Jun. Puwastien P, Pinprapai N, Judprasong K, Sungpuag P. Laboratory performance study VII: Analysis of mandatory nutrients for nutrition labelling. Final report, October 2003. Puwastien P, Pinprapai N, Judprasong K. Laboratory performance study VI: analysis of total folate in foods. Final report, July 2002. Puwastien P, Pinprapai N, Judprasong K. Laboratory performance study V: main nutrients analysis. Final report, October 2001. Puwastien P, Raroengwichit M. Laboratory performance study IV: nutrients for nutrition labelling. Final report, November 1999 - February 2000. 	

Description	Source
Conference and FCD and Application Programme Training:	
Conference: 8 th International Food Data Conference (8-IFDC), 1-3 October 2009	http://www.inmu.mahidol.ac.th/8ifdc/Invitation.php 
FCD Training: 1) FoodComp-ASIA 2002 6-24 May 2002	
2) FoodComp 2013 (for Myanmar), 17-28 June 2013	
Application Programme Training: INMUCAL Nutrient Calculation Programme (Twice per year)	
Workshops and Training: PT and RM development (recent activities)	
1) Regional Laboratory Network Training on Proficiency Testing ISO 17043: requirement and statistical”, 27-30 May 2014, Okura Prestige Hotel, Bangkok, Thailand	
2) General requirements for proficiency testing and ISO/IEC 13528:2005 (Statistical methods for use in proficiency testing by interlaboratory comparisons), 30 Apr – 1 May 2014, Ministry of Public Health, Nonthaburi, Thailand.	

Workshops and Training: PT and RM development (recent activities) (Continued)

<p>3) Statistics for Proficiency Testing. 6-9 August 2012. Department of Agriculture, Ministry of Agriculture & Cooperatives, Bangkok, Thailand</p>	
<p>4) Training on proficiency testing schemes. 18-21 July 2012, Quality Assurance and Testing Center 3 (QUATEST 3), Vietnam</p>	

International and national recognition:

<p>Prapasri Puwastien: 1) AOAC TDRM award (Technical Division on Reference Materials) at 122nd AOAC Annual Meeting and Exposition, Dallas, USA, 22-24 September 2008</p>	
<p>2) INFOODS Nevin Scrimshaw Award at 10th International Food Data Conference (10-IFDC), Granada, Spain, September 12-14, 2013</p>	
<p>Kunchit Judprasong: 1) 2012 Young Scientist Award in Sustainable Consumption and Production (the second runner up) in the Asia-Pacific region, at the United Nations University in Tokyo, Japan, 11 July 2012</p>	
<p>2) Young Scientist Award in "Nutrition research for Thai society development" at the 8th Thailand Congress of Nutrition, BITEC, Bangkok, Thailand, 6-8 October 2014,</p>	
<p>Uraiporn Chittchang Outstanding Alumni Award from Graduate Studies of Mahidol University Alumni Association, 2013.</p>	