



# Activities of the ASEAN Network of Food Data System (ASEANFOODS)

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Asia is the largest continent with a population of more than 2 billion. Within its subregions, great diversity exists in its socio-economic development, culture and lifestyle including food consumption patterns, beliefs and habits. As a result of this diversity, each region is now responsible for developing its own food composition data system while maintaining a flow of information between subregions via the ASEAN Network of Food Data System. This paper discusses the network and is meant to serve as a source of information for users worldwide. Copyright © 1996 Published by Elsevier Science Ltd

## INTRODUCTION

To maintain closer inter-country and inter-regional ties, the ASEAN Network of Food Data System (ASEANFOODS), a sub-regional network of ASEANFOODS, was established in 1986. Member countries include Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore and Thailand. In the future, Vietnam will be a new member of the network. The Institute of Nutrition, Mahidol University is designated as the Network's Regional Centre as well as the INFOODS Regional Data Centre. The Network's objective, in line with that of INFOODS, is to co-ordinate, encourage and facilitate activities in order to generate national and regional food composition data which would be of high quality, adequate quantity and accessible to users.

## ASEANFOODS ACTIVITIES

Over the last 9 years, and within the budget constraints, member countries and other regional centres have carried out several specific activities aimed at fulfilling the network's objectives. Three ASEANFOODS workshops have been held to strengthen collaboration among members within and between regions. The first two—held in Indonesia in 1986 with support from the Australian Government and in Thailand in 1989 with funding from the Japan International Cooperation Agency—reviewed the status of food composition data and activities on food composition data systems at a national and regional levels, identified problems and specific needs between member countries, and planned for future national and regional activities.

The third workshop was conducted in Thailand in 1991 with support from the United Nations University (UNU)/INFOODS. Participants came from Malaysia, the Philippines and Thailand, all of whom had already begun computerizing food composition data and constructing databases. During the workshop, food composition databases from the three countries were evaluated to identify necessary modifications for making them more compatible. A consensus was also reached on food groupings for a regional database as well as on source and quality codes compatible to the three ASEAN countries and New Zealand, the INFOODS Database Centre. INFOODS tagnames, specifically for nutrients–units–methods, will be adopted for use in the ASEAN food composition database to be developed in 1996. At the workshop, the Institute of Nutrition, Mahidol University (INMU) was designated as the INFOODS Regional Data Centre. A common data compilation program, namely the Advanced Revelation Database System (ARev), and an electronic mailing system for communication and data interchange were subsequently set up at INMU by INFOODS experts from New Zealand.

### Quality assurance programmes

#### *Development of regional and national food reference materials*

Reference materials are crucial for establishing a quality control system in a food analysis laboratory and for increasing the quality of food composition data. However, few laboratories in the region use commercial products because of limitations in nutrient content information and high price. Consequently two

material-certification studies, organized by the Network Regional Centre, were carried out to develop food reference materials. Collaboration between laboratories in Austria, Australia, New Zealand, the USA and ASEANFOODS member countries led to the development of four reference materials including consensus values on nutrient contents (e.g. total solid, protein, lipid, ash, calcium, phosphorus, sodium, potassium, magnesium, iron, copper, zinc). These reference materials can now be used as test samples in a laboratory quality control programme or for laboratory-performance studies (proficiency testing). Reference materials for a national laboratory-performance study are available at the Institute of Nutrition, Mahidol University. Requests with a proposal from developing countries are most welcome.

Material-certification studies have also been carried out in the Philippines to establish in-house or national reference materials. A similar activity among ASEANFOODS members should be encouraged as frequently as possible since it will eventually strengthen the competency of national laboratories and support the development of regional reference materials and high quality food composition data.

#### *Quality assurance system within the countries*

In addition to reference material development, ASEANFOODS members have conducted several quality assurance activities. For example, proficiency testing has been conducted in Thailand with two rounds, at the national level between government and

private laboratories, being performed in 1993 and 1994. The ASEANFOODS food samples (RF-1, SF-1, CS-2 and F-2), with consensus and assigned values, were used as test samples. Data were evaluated by calculating Z scores, and laboratories with satisfactory, questionable and unsatisfactory results were identified. In Indonesia, a hands-on workshop was conducted by an expert from the Government Chemical Laboratory, Australia, on HPLC maintenance and trouble-shooting. Documentation of a procedure manual and other activities in preparation for application of laboratory accreditation is being undertaken by the Food and Nutrition Research Institute, in the Philippines.

#### **International linkages**

In 1989, linkages were made between ASEANFOODS and other regional networks, mainly OCEANIAFOODS and APFAN (Asia-Pacific Food Analysis Network), since they have similar goals and objectives in improving the quality and availability of global food composition data. Since then, the linkage has been steadily improving through many regional conferences, meetings and workshops.

#### **NATIONAL FOOD COMPOSITION TABLES AND FUTURE ACTIVITIES**

The status of national food composition tables (FCTs) in ASEAN countries is summarized in Table 1. Most

**Table 1. Status of food composition tables in various ASEAN countries**

Status	Indonesia	Malaysia	the Philippines	Singapore	Thailand
Availability (latest FCT)	+	+	+	+	+
	(1990)	(1988)	(1990)	(1993)	(1992)
Language:					
Local	+	-	-	-	+
English	-	+	+	+	+
Number of food groups	10	14	7 <sup>1</sup> /9 <sup>2</sup>	15 <sup>3</sup>	13
Food items	700	783	1300	200	518
Nutrients: proximate, minerals, vitamins	26	18	26	11	17+4 <sup>4</sup>
Amino acids	+	-	+	-	+
	128 food items		130 food items		469 food items in preparation
Fatty acids	+	-	-	+	
	66 food items				
Cholesterol	+	-	+	+	+
	33 food items		126 food items	200 food items	96 food items
Anti-nutrients:					
Oxalate	-	-	+	-	+
			119 food items		unpublished
Phytin	-	-	+	-	+
			128 food items		unpublished
Self-generated data	+	+	+	+	+

<sup>1</sup>Raw and cooked foods.

<sup>2</sup>Processed foods.

<sup>3</sup>Hawker foods.

<sup>4</sup>Data on Na, K, Cu, Zn are available at the Institute of Nutrition, Mahidol University.

FCTs are available in English and cover a wide variety of food items and nutrients as well as amino acid, fatty acid, cholesterol and anti-nutrients (oxalate, phytin). In all cases, either printed or computer copies can be generated for users.

On a regional basis, in 1994 FAO joined UNU in promoting the International Network of Food Data System project and is sharing the task of completing global food composition data activities in the developing world. Responding to this, one main network activity at national and regional levels for 1996 is to develop an ASEAN food composition database. At present, the national database of each country is being modified/prepared based on the 1991 ASEANFOODS workshop agreement in terms of format, food groups and INFOODS tagnames. Besides the nutrients included in existing FTCs (*ca* 1990), each country is collecting and generating additional nutrient data specific to its needs such as dietary fibre, sugars, fatty acids, cholesterol, the B complex vitamins, vitamins A and C, folic acid, Na, K, Mg and trace elements (Mn, Zn, Cu, I, Co and Cr). Food composition data for new food items are also being generated including local fish, meat and poultry sources, cereal and cereal products, dried beans, nuts and seeds, starchy roots and tubers, fats and oils, milk and milk products, and other miscellaneous items, in addition to traditional foods characteristic of certain nations and sub-populations, Western-type fast foods, foods from marine sources and those meant for export. Compilation and installation of the prepared database from each country will then be processed into the ARev System at the New Zealand INFOODS Database Centre. An archival file containing food composition data from ASEAN countries will be developed, followed by the generation of an ASEANFOODS reference database at an ASEANFOODS workshop to be organized by INMU in February 1996.

## OUTCOMES OF ASEANFOODS ACTIVITIES

1. Regular ASEANFOODS workshops maintain closer inter-country linkages, the flow of information and experience, and increase interaction between member countries.
2. International linkages with other regional centres, by attending conferences, workshops and meetings, has strengthened the ASEANFOODS members and institutions, thus supporting collaboration between the regions.
3. Having reference materials available in ASEAN can encourage activities in improving the quality of food composition data, not only within ASEAN countries but also in other developing countries and other regional networks.
4. In the near future, an ASEANFOODS regional database will be available which contains greater information in terms of food items and nutrient contents. This database will help fulfill the data needs of ASEANFOODS member countries and others in nearby regions where food composition data are lacking or not completely accessible.
5. Information about ASEANFOODS activities can be found in the INFOODS Newsletter which will be regularly published and widely circulated by the INFOODS Secretariat in New Zealand.
6. At present, the most important activity is regional database system development with assistance from INFOODS and OCEANIAFOODS. The co-ordinator and the ASEANFOODS's members are very grateful for the contributions of international and regional networks as well as local organizations. The continuation of collaboration and linkage between regions can strengthen the activities of ASEANFOODS and eventually enable us to improve the quality and availability of the global food composition data.