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Report

Food composition activities in Argentina, Chile and Paraguay

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ABSTRACT

Activities related to national food composition in Argentina and Chile have been traditionally developed by universities. Presently, due to the market globalization, governments must lead this task, along with the academic and private sector, to have a robust national food composition database (FCDB) for nutritional labeling and other purposes. A project was presented to the Food and Agriculture Organization of the United Nations (FAO) with the main objective of developing the national FCDBs of Argentina, Chile and Paraguay. FAO approved project TCP/RLA/3107 whose main results are: (i) governments recognize their leading role in food composition elaborating plans of actions for strengthening this activity for the next few years; (ii) professionals from each country will be trained to set up food sampling plans and standardized compilation procedures; (iii) sampling plans for 30 priority foods will be developed and 250 food items compiled per country; (iv) 5 key foods will be sampled, according the developed sampling plans, and analyzed per country; (v) all the information generated will be part of the respective database and shared with LATINFOODS.

This project has been an important impulse to institutionalize food composition activities in Argentina, Chile and Paraguay, through a permanent Government program which permits the establishment and updating of their National FCDB and Food Composition Tables (FCT).

1. Introduction

The market globalization and commercial agreements signed among many countries inside and outside Latin America mean that each country must have a robust Food Composition Databases (FCDB) to afford the present requirements for nutritional labeling, commerce exchange, and consumer protection.

Under this perspective food researchers belonging to the academic sector from Argentina, Chile and Paraguay presented a project proposal to the Food and Agriculture Organization of the United Nations (FAO) signed by their respective Governments, in order to strengthen and support officially in a permanent way along the years, the updating of their respective National Food Composition Tables (FCT) and to build a robust FCDB in each country.

This project is an activity included within the frame of LATINFOODS (Acuerdos y Plan de Actividades, 2009/11) and it includes the common objective of the countries integrated in the network, such as the preparation of a modern regional database. The preparation of the preliminary database for LATINFOODS was supported by FAO and UNU/INFOODS. It is held by the University of Chile through the Instituto de Nutricion y Tecnología de los Alimentos (De Pablo, 2000). In Costa Rica, a Food Composition Information System (SICACOR) has been developed to provide access to reliable, representative and recent composition data for local foods (Blanco Metzler et al., 2009).

The objectives of the FAO project were:

- developing government plans for strengthening food composition activities in each country;
- training an important group of professionals from the three countries in food sampling plans, food compilation procedures, laboratory proficiency test and;
- organizing a FCDB.

2. Organization, activities and results

The National counterparts in this project were government and academic institutions. The information is shown in Table 1.

Three subregional workshops were developed, one in each country. The first one was held in Tucuman, Argentine, in February 2008, on Food Sampling Plans to generate food composition data (FCD), under the direction of Joanne Holden from USDA. Twenty-two professionals were trained. Sampling plans for 30 different foods considered priority in each country

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Table 1
National counterparts.

Country	Government sponsor	Academic sponsor
Argentina	Food National Agency, Secretary of Agriculture, Animal Production, Fishery and Food (SAGPyA).	Institute of Biological Research (INSIBIO), National University of Tucuman, National Agency for Science and Technology Research (CONICET).
Chile	Ministry of Health, Department of Food and Nutrition.	University of Chile, Faculty of Pharmaceutical and Chemistry Sciences, and Institute of Nutrition and Food Technology (INTA).
Paraguay	Ministry of Public Health and Social Welfare, National Institute of Food and Nutrition (INAN).	

and a preliminary version of a Sampling Manual were developed, according to a LATINFOODS recommendation (Sammán et al., 2009). An Action Plan for strengthening the LATINFOODS National Branches of Argentina, Chile and Paraguay for 2009/2011 was presented, discussed and approved in each National Workshop.

The second sub-regional workshop was held in Santiago, Chile, in April 2008 on Data Compilation for FCT, under the direction of Dr. Elizabete Wenzel from the University of Sao Paulo, Brazil. Twenty-two professionals were trained and a Manual and Forms for compilation of FCD developed by the Consultant were used, modified to complete the information compiled and used later in this project for the compilation of at least 250 different foods in the three countries. The Manual and modified forms will be also the common tool used by the LATINFOODS compilers. The third one was held in Asunción, Paraguay, in June 2008 on Organization of FCDB, under the direction of Dr. Saturnino de Pablo from the University of Chile, Chile. New spreadsheets in Microsoft Excel® (Microsoft Corporation, 2007) were presented to simplify the data compilation and transfer to a Database. Sixteen professionals were trained in this workshop.

Three National Workshops on "Basic Principles to ensure the generation and compilation of good quality data in food composition" were part of the project.

Three topics were developed and discussed in each workshop.

2.1. Sampling plans for 30 key foods for each country

The National Consultants together with the Consultant in statistics and sampling in each country elaborated a sampling plan proposal for their 30 key foods, according to the statistical procedures and criteria developed during the first Subregional Workshop on "Food Sampling Plans to generate FCD". These proposals were presented, discussed and agreed during the respective National Workshops.

2.2. Compilation of FCD

Compilation procedure was carried out in the three countries by the respective national food compiler. Different sources of FCD were used to collect the information. These included visits to industries, private and public institutions (i.e. universities, ministries), or phone appointments. In all cases the Manual for Compilation and Microsoft Excel spreadsheets agreed upon in the Subregional Workshop on Data Compilation for FCT were used. A total of 759 new food items among the three countries were compiled. Table 2 shows the distribution per country and food type, organized according to the food groups established by LATINFOODS (FAO, 1995). All these new FCD will be incorporated into the respective updated National FCDB and National FCT.

2.3. Analytical proficiency laboratory test

Performed under the direction of Dr. Leonardo Merino, Swedish Food Agency, during August-September 2008, three reference standard food matrixes were used:

- *Round 1.* Meat based food for proximate analysis and fatty acid composition of the fat extracted, including trans fatty acids.
- *Round 2.* A cereal for dietary fiber, sodium and iron.
- *Round 3.* A juice for vitamin C and beta-carotene.

The number of participant laboratories is shown in Table 3.

The results indicated that there was good agreement with the standard materials for moisture, nitrogen, ash, fatty acid composition including trans, iron and vitamin C. However, more

Table 2
Distribution of compiled food items.

Code	Food groups	No of food items		
		Argentina	Chile	Paraguay
A	Cereals and derivatives	14	6	77
B	Vegetables and derivatives	38	16	17
D	Fats and oils	10	15	13
E	Fishes and seafoods	37	10	_
F	Meats and derivatives	28	47	10
G	Milk and derivatives	20	12	38
C	Fruits and derivatives	1	_	32
H	Soft drinks	_	_	30
J	Eggs and derivatives	6	_	_
K	Sugar products	12	6	_
N	Foods for special diets	_	16	_
P	Native foods	21	15	_
R	Processed foods	31	10	18
S	Prepared foods	31	47	_
T	Legumes, seeds and derivatives	9	12	15
	Total	258	251	250