



Report

Brazilian Network of Food Data Systems and LATINFOODS Regional Technical Compilation Committee: Food composition activities (2006–2009)

Elizabete Wenzel de Menezes*, Eliana Bistriche Giuntini, Milana C.T. Dan,
Nelaine Cardoso Santos, Alexandra Tavares de Melo, Franco M. Lajolo

Depto. Alimentos e Nutrição Experimental, Faculdade de Ciências Farmacêuticas, Universidade de São Paulo, 05508-000 São Paulo, SP, Brazil

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ABSTRACT

The Brazilian Network of Food Data Systems (BRASILFOODS) has been keeping the Brazilian Food Composition Database-USP (TBCA-USP) (<http://www.fcf.usp.br/tabela>) since 1998. Besides the constant compilation, analysis and update work in the database, the network tries to innovate through the introduction of food information that may contribute to decrease the risk for non-transmissible chronic diseases, such as the profile of carbohydrates and flavonoids in foods. In 2008, data on carbohydrates, individually analyzed, of 112 foods, and 41 data related to the glycemic response produced by foods widely consumed in the country were included in the TBCA-USP. Data (773) about the different flavonoid subclasses of 197 Brazilian foods were compiled and the quality of each data was evaluated according to the USDAs data quality evaluation system. In 2007, BRASILFOODS/USP and INFOODS/FAO organized the 7th International Food Data Conference “Food Composition and Biodiversity”. This conference was a unique opportunity for interaction between renowned researchers and participants from several countries and it allowed the discussion of aspects that may improve the food composition area. During the period, the LATINFOODS Regional Technical Compilation Committee and BRASILFOODS disseminated to Latin America the Form and Manual for Data Compilation, version 2009, ministered a Food Composition Data Compilation course and developed many activities related to data production and compilation.

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1. Introduction

The Brazilian Network of Food Data Systems (BRASILFOODS) was created in 1984 as part of the Latin American Network of Food Data Systems (LATINFOODS) and International Network of Food Data Systems (INFOODS). The BRASILFOODS, located at the University of São Paulo (USP) works together with LATINFOODS, cooperating with the LATINFOODS database (FAO/LATINFOODS, 2000) and other activities related to the generation and compilation of food composition data in the region.

The BRASILFOODS coordinated the Regional Technical Compilation Committee of LATINFOODS in the period between 2006 and 2009. This committee is part of the LATINFOODS Executive Committee and it aims to stimulate activities related to data compilation between Latin-American countries. The main

activities developed in the period between 2006 and 2009 are described in the present work.

2. Activities coordinated by BRASILFOODS

2.1. Brazilian Food Composition Database (TBCA-USP)

The Brazilian Food Composition Database (TBCA-USP) (<http://www.fcf.usp.br/tabela>) was created in 1998, aiming to centralize the Brazilian information on food composition (USP, 1998). This database has been continuously updated (Menezes et al., 2002; Giuntini et al., 2006).

In the version 5.0 (2008) of the TBCA-USP, data on different carbohydrates individually analyzed, from around 112 Brazilian foods, were included, as well as the glycemic response produced by 41 of these foods. Concentrations of available carbohydrates (soluble sugars and available starch) and unavailable carbohydrates (dietary fiber, resistant starch, beta-glucans, fructans) were quantified by BRASILFOODS, and other national data was compiled. All data on glycemic index and glycemic load of foods were evaluated in healthy volunteers by BRASILFOODS. This information is an important tool for accomplishing the aims of the global

* Corresponding author at: Universidade de São Paulo (USP), FCF, Depto. Alimentos e Nutrição Experimental, Bl. 14, Av. Prof. Lineu Prestes 580, 05508-000 São Paulo, SP, Brazil. Tel.: +55 11 3091 36 24; fax: +55 11 3815 44 10.
E-mail address: wenzelde@usp.br (E.W. de Menezes).

strategy for health (WHO, 2004) and, with the improvement of this information, carbohydrates will hopefully not be estimated by difference, but quantified by analytical methods (Menezes et al., 2009). This activity was financially supported by the Brazilian Health Ministry and CNPq (Project n° 401917/2005-3).

2.2. Application of quality evaluation system on flavonoid data

The objectives of this activity were to compile and evaluate the quality of flavonoid data. For the compilation, the most abundant compounds in the flavonoid subclasses were considered (flavonols, flavones, isoflavones, flavanones, flavan-3-ols, and anthocyanidins) and the analysis of the compounds by HPLC was adopted as criteria for data inclusion. The data quality was evaluated through USDAs data quality evaluation system for flavonoids (Holden et al., 2005), with modifications, considering five quality categories (number of samples, sampling plan, sample handling, analytical method and analytical quality control). Confidence codes (A, B, C, and D) were assigned to every value. Data (773) about compounds present in the different flavonoid subclasses were evaluated in 197 Brazilian foods (22 publications). The confidence code C was assigned for 99% of data and B for the other 1%. The main categories that received low average scores were: number of samples, sampling plan and quality control (2, 5 and 4, respectively). The most part of compiled papers did not describe the methodology validation. These results show that researchers need to be conscious about the importance of the number and plan of evaluated samples and the complete description of all the process of methodology validation and analytical quality control (Santos, 2009). This data is ready to be included in the TBCA-USP, which is very important in order to evaluate flavonoid intake.

2.3. Compilation and analysis of new data

Data compilation has been done through the Form and Manual for Compilation, proposed by BRASILFOODS, version 2009, once it allows a simple compilation, in accordance to the rules and guidelines of LATINFOODS. Summary of compiled and evaluated data, ready to soon be included in the TBCA-USP: proximal composition – 600 foods; flavonoids – 773 data on different compounds (28) present in the main flavonoid subclasses from 197 foods, with their respective confidence codes; carbohydrates – 100 foods; fatty acids – 150 foods; minerals and vitamins – 120 foods.

The individual carbohydrate analysis is being developed in approximately 100 foods (mainly fruits and vegetables) that are already available in the TBCA-USP, but which have carbohydrates calculated by difference. At the same time, vitamins and minerals will be analyzed in these samples.

The analysis of bioactive compounds (flavonoids and others) and antioxidant capacity of foods have been developed by laboratories from USP in order to be compiled and introduced in the TBCA-USP.

2.4. Reviewer of publication

BRASILFOODS collaborated as a reviewer of INFOODS/FAO publications (Charrondiere et al., 2009; Charrondiere and Burlingame, 2009) and participated as a guest editor of JFCA for the 7th IFDC issue (volume 22, issue 5, August 2009).

3. Activities coordinated by BRASILFOODS and INFOODS/FAO

3.1. 7th International Food Data Conference (7th IFDC)

The Conference had the participation of 110 researchers (65 international and 44 Brazilian) from 40 countries (Menezes, 2007).

The scientific program had 55 oral presentations in the plenary sessions and 87 abstracts presented as posters (Menezes and Lajolo, 2007). Eighteen of the presentations and the complete program have been published (Menezes, 2009). The conference was a unique opportunity for interaction between researchers and participants from several countries, several international organizations, Brazilian regulatory organizations and government agencies, industries, nutritionists and other health professionals. This conference allowed the exchange of experiences and knowledge, opportunities to structure new partnerships and discussion of aspects that may improve the food composition area.

The 7th IFDC was possible thanks to the cooperation and sponsorships of the Brazilian Society for Food and Nutrition (SBAN), United Nations University (UNU), International Food Data Conference Task Force, Latin American Network of Food Data Systems (LATINFOODS), International Union of Nutritional Sciences (IUNS), Consultative Group on International Agriculture Research (CGIAR), International Life Sciences Institute (ILSI), Ministry of Foreign Affairs of Brazil, FAO, European Food Information Resource Network (EuroFIR), Bioversity International, Global Facilitation Unit for Underutilized Species (GFU), Convention of Biological Diversity (CBD), the Brazilian Ministry of Environment, Department of Food and Experimental Nutrition of USP, University of São Paulo, BRASILFOODS and more than 11 food industries (Menezes and Lajolo, 2007).

3.2. Expert Consultation FAO, INFOODS, Bioversity International

BRASILFOODS participated in the organizing committee, giving infra-structure support in Brazil, for the realization of the “Expert Consultation on nutritional indicators for the biodiversity 1. Food Composition”, FAO, INFOODS, Bioversity International, which was held in São Paulo, Brazil, on October 21, 2007. The consultation counted on the participation of 16 experts from 13 countries and aimed to define an indicator of food composition for biodiversity and nutrition (FAO, 2008).

3.3. 9th National Congress of the Brazilian Society for Food and Nutrition

BRASILFOODS organized and coordinated the Symposium “Food Composition and Biodiversity”, during the 9th National Congress of SBAN, which took place in São Paulo, SP, Brazil, on October 25, 2007.

4. Activities coordinated by the LATINFOODS Regional Technical Compilation Committee and BRASILFOODS

In the period between 2006 and 2009, the coordination of LATINFOODS Regional Technical Compilation Committee was under the responsibility of the BRASILFOODS; therefore, several compilation activities were organized by LATINFOODS and BRASILFOODS together.

4.1. Dissemination to Latin America of the Form and Manual for compilation of food composition data – BRASILFOODS version 2009

The compilation of food composition data requires a complex theoretical basis, with pre-established criteria related to: number of samples; sampling plan; sample handling; identification and proceeding of the analytical method adopted; conversion factors; analytical quality control; detailed identification of nutrients and foods; among others. In order to facilitate data compilation in the different Latin American countries, the coordinator of LATINFOODS Regional Technical Compilation Committee and BRASILFOODS

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