

HARMONIZING NUTRIENT DATABASES FOR NORTH AMERICAN POPULATIONS: THE CARIBBEAN PERSPECTIVE

Pauline M. Samuda, Caribbean Food and Nutrition Institute

The development of a comprehensive nutrient database for the Caribbean region presents a major opportunity to promote public health and foster food trade within and outside the region. Eighteen countries, separated by large expanses of water and spanning a distance of nearly 4,000 km comprise member countries of the Caribbean Food and Nutrition Institute (CFNI). The dietary practices of the region reflect the diverse heritage of its people (African, Asian, Amerindian, European).

Information on the nutrient content of approximately 900 foods commonly consumed throughout the Caribbean are published in the second edition of the Food Composition Tables for use in the English-speaking Caribbean (CFNI, 1995). The first edition, published in 1974, contained data on 668 foods (CFNI, 1974).

In these tables the food composition data are presented in 15 food categories adapted from those suggested by the FAO of the United Nations for reporting food consumption surveys or compilation of food balance sheets. Table 1 shows the number of entries by food categories.

Food items for which compositional data are provided are those commonly found in municipal and parish markets and supermarkets throughout the English-speaking Caribbean as well as from information provided by the Agricultural Statistical reports published by different governments in the region.

Food components addressed are: Moisture, Energy, Protein, Total Fat, Saturated Fat, Cholesterol, Total Carbohydrate, Fibre (only crude fibre values for some entries), Calcium, Iron, Potassium, Sodium, Zinc, Vitamin A, Thiamin, Riboflavin, Niacin, Total Folic acid, Cyanocobalamin and Vitamin C. Data were drawn predominantly from international data bases including the USDA handbook 8 and the British food tables. Although there are some data for cooked and processed foods, most of the data are for the edible portions of raw foods expressed as nutrient weight per 100 gram edible portion. Also included are percentages for refuse, as purchased. To date, tag names and descriptors have not been attached to the food components.

Two major activities, aimed at updating food composition information for the Caribbean, were recently carried out by the Caribbean Food and Nutrition Institute. First, a "Core foods" list was identified for Jamaica through a study conducted in collaboration with the University of Maine, USA. Using the national sampling protocol developed in that study, samples of 24 of the 70 identified foods/dishes were collected and analyzed for proximate constituents, dietary fibre, lipid content and 11 minerals.

Table 1: Number of Entries by Food Categories Contained in the Caribbean Food Composition Tables

Food Category	Number of Entries
1. Cereals	111
2. Starchy Fruits, Roots and Tubers (Ground Provisions/Produce)	36
3. Sugars and Syrups	27
4. Pulses Nuts and Oil Seeds	75
5. Green Leafy and Yellow Vegetables	84
6. Other Vegetables	53
7. Fruits	90
8. Meats	81
9. Poultry and Other Meats	30
10. Eggs	10
11. Fish and Shellfish	98
12. Milk and Milk Products	46
13. Fats and Oils	32
14. Miscellaneous Foods	64
15. Composite Dishes/Prepared Foods	64
TOTAL	901

Second, the Nutritionist IV dietary analysis programme, used for evaluating dietary studies in the region, was modified from its predominantly United States database to include approximately 1,000 Caribbean (mostly Jamaican and Trinidadian) foods. Nutrient data for the Caribbean foods entered into the database include some direct analytical data and manufacturers' product data but are mostly those derived from nutrient content calculations of popular recipes collected from some Caribbean islands.

Notwithstanding all these efforts, the current Caribbean food tables are characterized by two major limitations, namely:

1. The incompleteness of the nutrient profiles of foods especially with regards to lipids, minerals and dietary fibre.
2. The discernible absence of data on a number of foods commonly consumed by peoples of the Caribbean as well as data on composite dishes prepared by traditional cooking procedures.

These limitations present major obstacles to the assessment of dietary intake studies and have resulted in the absence of authentic food consumption studies in member countries. Furthermore, users of food composition data within the Caribbean such as government agencies, policy makers, health and agriculture professionals and consumers have consistently expressed the need for updated and extended food composition data.

Responding to the needs of the region for updated and expanded food composition data, CFNI is now embarking on the task of establishing a regional nutrient data base to be called CARICOMFOODS. This move is in line with the goal of INFOODS to create regional food composition centers with the goals of encouraging the generation of food composition data and developing an easy and accurate interchange of food composition data among countries and regions (Rand and Young, 1984). It must be noted that although INFOODS was initiated over a decade ago, the Caribbean, due largely to lack of financial and technical resources, remains one of the few regions in the world without the structure firmly in place for a data center.

CARICOMFOODS is expected to fulfill two major objectives, namely:

1. The generation and compilation of food composition data on foods and food products consumed by Caribbean populations, and;
2. The computerization of the food composition data structured in a form which offers conformity with the INFOODS system and which will promote regional and international access to Caribbean food composition data.

To fully establish CARICOMFOODS, CFNI has developed a proposal which seeks funds to implement the planned activities. Chief among the priority activities are the development of:

1. Standards and guidelines for the collection, compilation and reporting of food component data.
2. A food analysis network to facilitate the generation of food composition data and interlaboratory trials.

3. Sampling protocol to achieve representativeness of Caribbean foods.
4. Descriptors for single and mixed foods.
5. Guidelines for computerizing the database:
 - C Formatting
 - C Structure of files
 - C Import and export of data
 - C Movement of data files between Caribbean countries

It is proposed that CARICOMFOODS form a branch of NORAMFOODS regional data center.

The linkage of CARICOMFOODS to NORAMFOODS offers several potential advantages:

1. NORAMFOODS with its already functional system could offer valuable guidance to the development of CARICOMFOODS.
2. Caribbean migrant populations distributed throughout North America continue to consume many foods, food products and dishes unique to the Caribbean region. CARICOMFOODS linked to NORAMFOODS would offer easy access to Caribbean food composition data to governments and private agencies involved in the investigation of diet and health relationships of ethnic groups.
3. Caribbean governments have recently endorsed the World Trade Organization's agreement governing international trading practices. The implication of this agreement is that the region will be involved in more extensive trading in food among countries such as the U.S., Canada and Mexico. Linked data base between the two regions would offer interactive access to a wider range of food composition data.

Possible disadvantages of the linking of the two systems are related to the issues of intellectual property and ownership of access fees.

The successful establishment of CARICOMFOODS will therefore fill a huge vacuum which is hindering the development of various food and nutrition programmer in the region. We hope that the new millennium will coincide with the launching of our nutrient database in the Caribbean.

REFERENCES

Caribbean Food and Nutrition. (1974) Food Composition Tables for use in the English-speaking Caribbean. CFNI Press, Kingston.

Caribbean Food and Nutrition Institute.. (1995) Food Composition Tables for use in the English-speaking Caribbean. CFNI Press, Kingston.

Rand, W.M., and Young, V.R. (1984) Report of a Planning Conference concerning an international network of food data systems (INFOODS). Am J Clin. Nutr. 39:144-151.