

## **HARMONIZING NUTRIENT DATABASES FOR NORTH AMERICAN POPULATIONS: THE CANADIAN PERSPECTIVE**

Danielle Brulé, Section Head and Josie Deeks, Nutrition Officer, Nutrition Survey Section, Food Directorate, Health Canada, Ottawa, K1A 0L2

The Canadian Nutrient File (CNF) is a computerized database of food nutrient values currently in use in Canada. It is derived from the USDA Handbook No. 8. Modifications take into account the Canadian food supply, Canadian practices, grading standards, and some uniquely Canadian foods. The decision to maintain a Canadian standard reference came about because the major source of nutrient data for the Nutrition Canada Survey, conducted in the early seventies, was the 1963 USDA Handbook No. 8 : we wanted a database that included uniquely Canadian foods for use with our survey data. Also, a large number of different databases had begun to emerge in Canada and it was felt that one standard reference would eliminate the resultant variations in the quality of nutrient data. Eight versions of the CNF have been compiled and released since its implementation in 1979. The current edition of the CNF was released in April of 1997.

### **General Features**

In keeping with our Canadian character, the CNF is bilingual and metric. Thus, all food names, nutrient names, and measure descriptions are in French and English. All conversion factors and measures are in metric system equivalents. Both the source of the analysed food and the source of the mean value for each nutrient are indicated by numerical reference source codes.

Over the past year we have been developing a new in-house software program for the compilation of the CNF. This new system is in a Windows-Oracle environment allowing editing, archiving and potential for additional fields.

### **Food Name File**

The 1997 version of the CNF lists nutrient values for 4668 foods commonly consumed by Canadians. The new software allows us to maintain two fields for food descriptions. The first is limited to 60 characters and contains some abbreviations. The second is an expanded food name with no abbreviations as well as room for more natural phrasing (ie "prepared from mix with added milk and egg" rather than "incomplete"). A systematic nomenclature is used for structuring these food names. Elements which may be included are group, product, type, part, physical state, shape or form, cooking method, preservation method and/or brand name. Food names are in both French and English.

Each food can also be referred to by a sequence number unique to our database as

well as an eight digit food code (similar to the USDA food codes) which reveals the group to which this food belongs, the source of the data and an assigned item number.

To demonstrate some of the features of the in-house data management software and the CNF database itself, the next slides display the data entry screen, as it appears to the compiler. The first slide shows the information contained in the food name file. In the uppermost corner, we have the sequence number, followed by the group, source and item numbers for this food. We have also added a Country code box, into which we would place the foodcode used by the country from which the primary data originated. In this case it is empty because Canadian manufacturer provided the data. The next field is the 60 character food name in English and French and the expanded food names below.

### **Nutrient Name File**

The nutrient name subfile lists 115 different components in English and French, abbreviations for each nutrient, their respective codes, and units of measure. The 3 digit nutrient codes match those of the USDA Nutrient Database for Standard Reference. We do not at this time list INFOODS tagnames, but a new field for this purpose can easily be added.

### **Nutrient Amount File**

The largest of the three files that make up the database lists the values for each nutrient within a food. The in-house data management software allows us to archive all changes to the nutrient data, and view the archived value using the same search mechanism used for current data. All record modifications are accompanied by a date of entry. Missing values are readily distinguished from real zeros by an indicator in the far left column of the data entry screen.

This slide shows the entire data entry screen. Note the different folders for data archiving, measures, refuse, etc. Also note the missing value indicator, date of entry, and fields which allow us to record additional information on method of analysis, source of legislation regarding this nutrient or the reference from which this value was obtained.

### **Advantages**

Each of the contributing countries involved in NORAMFOODS maintains food composition data that relates to the food supply of their own population. The CNF is designed to provide nutrient values for basic foods and simple recipes commonly consumed in Canada. This allows us to prioritize food and nutrient analyses to our

specific needs and to appropriately distribute resources. However, our market is continuously expanding and changing and we cannot keep up with the vast array of new products or the changes in current product formulations. We frequently receive requests for information on these foods so time is spent searching for existing data, evaluating data quality and converting data to standard units. A regional database with a recognized structure may yield fast and easy access from a larger pool of nutrient data. In addition, we could expect an established standard approach to the assessment of data quality.

With the enlarged opportunities for communication and collaboration that this project provides we would not only benefit from sharing nutrient data, but also from sharing expertise and experience. Duplication of effort can be avoided in such areas as method development, data formatting and nutrient analysis. Collaboration on resolving common problems would be more effective. Of special importance is the development of standard guidelines for data gathering, formatting and documentation.

Beyond advantages to the development of each contributing database, participation in the development of the regional database offers the opportunity to play a role in establishing effective, reliable food composition data in developing countries. This process is crucial to the formulation of improved nutrition programs and policy. Even in our own countries the impact of food composition data on the health of populations is not as well recognized as it should be. The larger scope of NORAMFOODS may more effectively target government officials and funding agencies.

## **Harmonization Issues**

There are a number of issues which must be addressed in order to secure Canadian involvement in the implementation of the NORAMFOODS, regional data centre. First, Copyright in any Canadian government publication automatically vests in the Federal Government. As a result of this, we are obliged to charge a fee to all clients requesting the CNF. We are currently investigating the legal implications and client reaction to providing this same data as part of the NORAMFOODS database.

Within Health Canada, the current budget for the CNF allows for one full time employee. The present workload already exceeds the available manpower. Priority projects are backlogged. Efforts must be made to secure more resources on a more permanent basis.

This last point on the slide has been mentioned before and some progress is being made toward merging the various datasets. However, there is still much work to be done with regard to compatibility of measure descriptions, use of graphic images, field lengths, field names, etc.

**Next Steps**

As mentioned previously there are clearly instances where identical data is required by different parties. For example, because of the limited number of producers and buyers as well as extensive cross border distribution, the Canadian and US Bison Associations have demonstrated that it is possible to combine nutrient data from both countries and avoid duplication of time and effort.

The various working groups cannot be expected to make much headway without more frequent meetings and opportunities to communicate than have been made available up until the present time. We look forward to scheduling regular meetings and working on the continued development of the harmonization of nutrient data and expertise between the participating countries.