



HARMONIZING NUTRIENT DATABASES FOR NORTH AMERICAN POPULATIONS: THE MEXICAN PERSPECTIVE

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Mexico was the source of many of the foods that were taken from the American continent to Europe, such as corn, beans, tomato, chile (hot pepper), cacao (cocoa beans), etc. However, it is likely that among all the existing foods, only 10% of the native or autochthonous food products are known internationally. This means that there are tens or even hundreds of mainly fruits and vegetables that are unknown outside Mexico and even outside their micro-region. A project supported by McKnight Foundation is now underway to rescue the germ plasm of vegetables.

Mexico was one of the most important Vavilov centers, a source of many edible species as well as a crossroad of foods at a world level. During 17th and 18th centuries, many foods from Asia were brought to Mexico in the so-called Ship of China -which was in fact the Galleon of the Phillipines- that picked up foods from all over Asia. That is why prior to the Spanish conquest, many foods from the Andean Vavilov center could already be found in Mexico, such as potatoes and foods from the Caribbean tropic, like the yucca and many other roots. Due to the above and to the fact that Mexico has preserved many varieties not only of the native species but also of others that were brought later into it, Mexico becomes especially relevant for the purpose of creating a thorough database.

It is a well known fact that at present the United States and Canada are the source of many of the new industrialized, modified, compound foods and that virtually all of them are reaching Mexico and the Caribbean.

The new food nutritional value tables coordinated by MEXFOODS have already achieved a high degree of harmonization, first with the Spanish-speaking Caribbean countries whose analyses have been included, and, second, with the Central American (INCAP) and United States (Handbook No. 8) Tables. All of these Tables have been consulted by the computer software programmed for the following:

- If very similar results are obtained, it takes the Mexican result,
- If only one result is different, it considers the mean of the remaining results, and
- If all results differ, they are discussed considering other tables and the one that qualifies as the most acceptable one is included.

This information is available for the 800 most consumed foods in Mexico and the Caribbean. The resulting table involves an acceptable level of compatibility, but from the Mexican standpoint. This is both because the 800 selected foods are the most consumed ones in Mexico and because the computer software considered Mexican values as a priority.

At present Mexico has:

- Three printed versions with an average of 800 foods and 37 nutrients
- A computer version of the tables, and
- A multimedia CD-ROM with pictures, latin names and the names of foods in three languages. This volume contains basically fruits and vegetables.

There are advantages and disadvantages to a regional database. The advantages include free regional access to the database and the fact that the countries can share the cost of the analyses, especially of native foods. Some of the disadvantages, which are really of little importance, include the food nomenclature, the languages to be used and deciding how much to charge database users.

In order to achieve integration and harmonization of the regional database we suggest the following:

- C That all three countries know exactly each other's data and have free access to each other's databases.
- C That food names are given in three languages. Besides the latin name, the common name should appear in English, Spanish and French.

To document food analysis data specifying: the analytical method, the number of samples analyzed, the sampling method and the mean and standard deviation of each analytical value. We suggest to include the following as optional: upper and lower analytical values, sample characteristics, the region where the product is grown, its degree of ripeness, growing conditions, time of harvest, etc.

A list of natural native foods to be prepared by each country and a commitment to analyze them, thus enriching the regional database. Mexico has planned to analyze 150 natural foods in the next two years.

A list of the most widely used traditional recipes (by region) to be prepared by each country and a commitment to analyze them.

To define the foods that are common to all three countries and to use regional borrowed data.

A list of the fresh and industrialized foods that each country exports to other countries in the region and a commitment to make the corresponding chemical analysis to be included in the regional database.

To jointly decide which are the priority nutrients for the region, based on the existing food groups, their known functions and the health problems in the region, as well as the

analytical capacity available in each country.

To take into consideration some special cases such as carotenoids and many other bioactive phytochemicals that are constantly and increasingly being linked to several chronic, non-communicable diseases. This would include the study of isomers.

There are at present 15 laboratories in Mexico involved in the chemical food analysis project. They are located at universities and research centers in different states of the country. Some of them have the necessary equipment to analyze the 37 nutrients included in the Mexican tables. Others work jointly and have distributed among themselves the work of analyzing proximals, amino acids, vitamins and minerals.

As regards the native foods project, we propose to create a work group composed of several universities and organizations of the United States, Canada and Mexico that have resources and technical capacity in the area of food analysis.

The field of foods is a very dynamic one. The population is increasingly motivated to consume new and, mostly, better foods. Agriculture and industrial firms are ready to produce and offer an enhanced variety of foods. This means that we will have many new products to analyze every year, which may be more or less healthy, depending on the outcome of our participation. We may state with certainty that in the region composed of Mexico and the Caribbean countries there are still many more new foods that will allow us to achieve a better population health and a stronger economy that may also benefit other regional common market countries.

To close, we would like to express a warning regarding the great number of plant species and varieties that could disappear in the near future without us having ever known about their nutritional value. Let us rescue the many endangered fruits and vegetables that may represent a true treasure of bioactive phytochemicals.