# Using International Nutrient Data

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## USING INTERNATIONAL NUTRIENT DATA

Foods, products and dishes in the Nordic countries - Denmark, Finland, Iceland, Norway and Sweden - are very similar, if not basically the same. But of course there exist some differences especially with respect to pure national food items such as Swedish fermented herring, Icelandic geo-thermal water and Finnish Karelian pastry.

As a result, you might believe that our data of food nutrients would also be similar, but that is not always the case.

The food composition data may differ depending on e.g. the following fac- tors: natural variations, standards, enrichment or fortification, analyses, energy factors, dietary fibre and recipe calculation.

### Natural variations

Danish studies show considerable differences in nutrient contents between herring from the North Sea and the Baltic Sea, depending on the fish food available. Similar differences in nutrient contents could probably also appear in other wildlife animal species.

### Standards

Some food items in the Nordic countries are standardized. Let us just takeone example: low-fat milk. You must be aware that the fat content may vary. In Sweden low-fat milk contains 0.5% fat, in Finland 1% and in the other Nordic countries 1.5% fat.

### Enrichment or fortification

Enrichment of food items should also be taken into consideration. The low-fat milk can serve as an example again. This milk is enriched with vitamins A and D in Sweden and Finland but not in the other Nordic countries.

Another example is common wheat flour. In Iceland and Sweden this flour is available both plain and enriched with thiamin, riboflavin, niacin and iron, and in Sweden also with vitamin B6. In the other three countries the wheat flour is unenriched.

The enrichment of a food item is usually indicated in the food description, but, as in the Swedish base, enrichment nutrients are not indicated.

But there are also other types of enrichment to be considered, that is soil and feed enrichment. In Finland e.g., due to the very low content of selenium in the soil, the addition of selenium to fertilizers was begun in 1984. These fortified fertilizers will affect both plant and animal foods, and the outcome will be an increase of the selenium intake in humans.

### Analyses

In the Nordic countries the co-ordination and evaluation of analysis methods have been arranged to provide for reliable common methods. This work is carried out by the Nordic Committee on Food Analysis. As a result of this co-operation, the differences in analysis results depend more on natural food variations and sampling than on methods.

One mode of analysis procedure, sometimes used in the Nordic countries, may create discrepancies. That is when, e.g., one year you analyse the proximate constituents for a specific group of foods, and the following year you analyse the fatty acids, vitamins or minerals for the same food group, but most probably do not use the same samples as for the proximates.

### Energy calculation

In Sweden we calculate energy in kJ according to the European Economic Communitys directive on nutrition labelling for foodstuffs.

The energy value to be declared shall be calculated using the following conversion factors:

| | | | |
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| cabohydrate (except polyols) | 4 | kcal/g | 17 kJ/g |
| polyols | 2.4 | kcal/g | 10 kJ/g |
| protein | 4 | kcal/g | 17 kJ/g |
| fat | 9 | kcal/g | 37 kJ/g |
| alcohol | 7 | kcal/g | 29 kJ/g |
| organic acid | 3 | kcal/g | 13 kJ/g |

As the other Nordic countries use the conversion factor 38 kJ/g for fat, there are some differences in the energy values for food items containing fat. Moreover, three countries use 30 kJ/g for alcohol.

Some Euoropean countries do not follow these EEC factors, e.g. Great Britain and France who use 3.75 kcal for carbohydrates. One Swedish firm exported some products to England and the British firm changed the Swedish energy values. The firm contacted us and asked what to do. I informed the firm that in England they use 3.75, and I suggested that the producer write to the importer and ask if that was the reason for changing the energy values. A prompt answer came: "Yes, we use 3.75 for carbohydrates, probably because we are British".

## Dietary fibre

Dietary fibre holds a unique position with regard to energy. Suggestions on conversion factors have a range of 2 - 5.4 kcal/g. A mean of 2 or 3 might be adequate. But according to the EEC regulations on foodstuffs, dietary fibre should not be calculated for energy. The food manufacturers in the Nordic countries follow the EEC regulations, and the compilers of food composition tables and bases will also most certainly do that. A solution to the problem of dietary fibre and energy could be, e.g. in food composition tables, to give two energy values for foods containing dietary fibre, one without and one with energy for fibre. This procedure is now being used in the Finnish food composition tables.

## Recipes

The people responsible for the nutrient data banks in the Nordic countries have somewhat different approaches to calculation for nutrients in recipes. Yield factors in cooking are commonly used, but the factors may differ for the same dishes. Factors for nutrient changes, mostly for vitamins, are used differently. In Norway, vitamin B factors are used in calculating bread recipes. In Denmark, factors for different food groups and cooking methods are created, and in Finland, the emphasis is put on the cooking methods in constructing factors. We, in Sweden, have up to now been using loss factors for 5 vitamins in all recipes of our standard recipe file. In the future we hope to coordinate the recipe calculation further.

## Compiling data

Within Norfoods (the Nordic group working on compatibility of Nordic food composition tables and nutrient data banks), we have agreed that, when nutrient values are missing, we should primarily use Nordic analysis data. But how often have we not been grateful to the Americans, who have analysed so many food items for so many nutrients. Of course we are also much obliged to other countries for their analysis work on foodstuffs. Without international assistance and cooperation, we compilers would be hard pressed to produce complete national food composition tables and nutrient data banks.

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