

SESSION 2.

Codex Issues Related to Food Composition (Labeling, Health Claims, Nutrient Reference Values, Analytical Methods)

S2-S-1

Codex Guidelines on Nutrition Labeling and Health Claims

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Consumers gather information about the foods they buy from various sources including family members and friends as well as advertisements in a variety of media. Information about the characteristics of a food can also be found on food labels. From a public health point of view, food labels can be a useful source of nutrition information. Information about the nutritional characteristics of a food can assist consumers in making better food choices. It also encourages the use of nutrition principles when making food choices and in preparing meals. Indeed, nutrition information on food labels can be one of the strategies adopted to assist consumers in adopting healthy dietary practices. There are two main types of information on food labels, namely nutrition labeling or nutrient declaration and nutrition and health claims.

Nutrition information on food labels is also beneficial to food manufacturers. Such information enables manufacturers to highlight nutritional quality of their products. Consumers can also be informed of the functions or health benefits of certain nutrients or “functional” components in food.

Food regulatory agencies welcome efforts of food companies to disseminate such nutrition information to consumers. However, they have to ensure that such information is factual and appropriately presented. There has been increased interest and efforts of authorities to improve regulatory control of nutrition labeling and nutrition and health claims. More countries are looking towards Codex Alimentarius international standards for guidance in establishing national regulations. These standards are established through the Joint FAO/WHO Food Standards Programme, aimed at protecting health of the consumers and ensuring fair trade practices in the food trade.

Two Codex standards are of relevance, namely Guidelines on Nutrition Labelling and Guidelines on Nutrition and Health Claims. Details of requirements, conditions and format for nutrition labeling are provided in the first Guidelines. Nutrition labeling is a description intended to inform the consumer of nutritional properties of a food. It is often taken to mean Nutrient Declaration, which is a standardised statement or listing of the nutrient content of a food. It is often known as Nutrition Information Panel (NIP) on a food label.

The definitions of the types of claims allowed and the conditions for making these claims are outlined in the second Codex Guidelines. Nutrition claim means any representation which states,

suggests or implies that a food has particular nutritional properties. Nutrition claims include nutrient content claim (e.g. high in vitamin C; free of cholesterol) and comparative claim (e.g. more protein). Health claims means any representation that states, suggests or implies that a relationship exists between a food or a constituent of that food. Three types of health claims are permitted, namely nutrient function claims, other function claims and reduction of disease risk claims. The nutrient function claims describe the physiological role of macronutrients, vitamins and minerals in growth, development and normal functions of the body. Other function claims describe specific beneficial effects of the consumption of a bioactive component in food in improving or modifying a physiological function. Disease risk reduction claims relate the consumption of a food or food bioactive component to the reduced risk of developing a disease or health related condition.

A review of the situation in five South East Asian countries (Indonesia, Malaysia, Philippines, Singapore and Thailand) as well as China and Japan showed that there has been increased interest in activities in nutrition labeling and health claims. Malaysia enforced mandatory nutrition labeling for wide variety of foods in 2005, covering more than 50 categories of commonly consumed foods, contributing significantly to dietary intake. In other Asian countries, mandatory nutrition labeling is only applicable to: foods for special dietary uses (e.g. infant formula, cereal-based foods for children); foods making nutrition claims; fortified or enriched foods. Nevertheless, many products in the market do have voluntary nutrition labeling with format guidelines provided by the respective regulatory agency. These format and requirements for NIP differ widely for countries in the region.

Nutrition claims are permitted in all the countries reviewed. All countries allow nutrient function claims. Other function claims are permitted in all countries, except in China and Thailand. The claims relate to several bioactive components including several dietary fibres and non-digestible oligosaccharides, and plant sterols. Disease risk reduction claims are considered higher level claims and are permitted only in a few countries, namely Indonesia, Philippines and Japan, and only for a few nutrients or bioactive compounds. There are considerable differences in the permitted nutrition and health claims in countries in the region and may not necessarily follow the Codex guidelines. There are also differences in the regulatory framework for the approval of health claims. Nevertheless, all regulatory authorities require proper scientific substantiation of health claims. There will certainly be increased interest and activities in the region amongst consumers, food industry and regulatory agencies.

There are various challenges in implementing these regulations. An important area is various issues related to consumer understanding and utilization of nutrition information on food labels. One area relevant to this conference is good food composition data and laboratory capability. For truthful nutrition labeling, food manufacturers have to ensure that there is accurate data on the composition of the nutrients contained in the food. Similarly, for nutrition and health claims, accurate data on the amounts of the nutrients or food components are needed. For scientific substantiation of the claimed health effects, accurate quantitation of the amounts of these nutrients or components is essential. For regulatory agencies, well-equipped laboratories and well-trained personnel are required for surveillance and enforcement purposes.

Codex work in the area of nutrition labeling and claims are also continuing. Recognising the heavy and growing burden of non-communicable diseases in almost all countries, WHO has developed a Global Strategy on Diet, Physical Activity and Health. An Action Plan on how Codex can assist in the implementation of the Global Strategy has been actively deliberated within the Codex Committees on Food Labeling and Nutrition and Foods for Special Dietary Uses. Member countries agreed to work further on several topics, including revision of the Guidelines on Nutrition Labeling.

Keywords: Codex standards; Guidelines; Nutrition labelling; Nutrition and Health claims

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Using EuroFIR Food Composition Data to Address Current Public Health and Nutrition Issues: A Focus on the European Nutrition and Health Claims Regulation

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European consumers are increasingly exposed to a wide variety of messages about the relationship between diet and health and there is widespread interest in the nutritional content of food.

Helping consumers to choose a healthy diet is increasingly important in the European Union (EU) as the prevalence of obesity and other related conditions such as type 2 diabetes and cardiovascular disease are rising. Accurate and informative food labelling can play an important part in helping consumers to select the most appropriate foods when shopping to provide a healthy balanced diet.

A growing number of foods now carry nutrition and health claims and the European Commission (EC) has recently introduced new legislation to harmonise the way claims are made across the EU (Regulation (EC) 1924/2006). The regulation aims to protect consumers from unsubstantiated, exaggerated or untruthful claims about foodstuffs, whilst allowing the EU market to function effectively.

An essential part of being able to make and verify these claims is access to accurate up-to-date food composition data. EuroFIR (European Food Information Resource Network), the world-leading European Network of Excellence on Food Composition Data, is providing an internet portal which allows access to the most up-to-date food composition data from all online food composition databases (FCDBs) available across Europe and internationally.

It is hoped, from a public health perspective, that the incentive of being able to display a nutrition or health claim on a product will drive reformulation of foods in Europe, either to increase the content of beneficial constituents (e.g. fibre), or to comply with a specified nutrient profile, and that this will bring about substantial changes in the composition of foods (e.g. reductions in the sodium content of foods). The links that EuroFIR is building with the food industry to share food composition data with FCDB compilers will help to ensure that available data keep up with these changes in food composition.

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Keywords: EuroFIR; Food composition data; Nutrition and health claims

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Statistically Optimal Sample Size Allocation in Food Composition Tables

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In food data collection, sampling design is the key to ensure data quality. In the last Codex Committee on Method of Analysis and Sampling, it was agreed to step forward to develop a guideline on uncertainty of sampling. In turn, during development of the sampling plans for a food composition database, we often face a sample size allocation problem. Allocating an adequate sample size to important food groups is essential in ensuring data quality. The importance of each food, namely its consumption or production, has to be considered, as well as the variability of the composition and the restrictions existing in the available resources for sample collection and analysis. Here, we demonstrate an example of sample size allocation using two allocation strategies: “proportional allocation” and “Neyman allocation”. They are discussed for their applicability to food composition surveys. Both strategies include the consumed or produced quantity of the foods. We review some of the available statistics of the quantity and its inherent problems. In addition, we show the allocation results of the potato group. Although the strategies can be applied to any food group, the potato group is a good example because foods with dissimilar properties are in the same group: the group includes both potatoes which are natural products and whose composition varies greatly and also starches which are purified products and whose compositional variation is much smaller. We find that the allocated sample size for starch is different in the two strategies: Neyman optimal allocation is much smaller than the proportional one. This is because Neyman allocation encompasses the variability in the composition. Considering the fact that starches include few nutrients except carbohydrates, Neyman allocation may be more reasonable. We also discuss some problems encountered in statistical analysis: there are great discrepancies between consumption data and production data. Most starches are used for glucose syrup, so the problem of double counting for starch and glucose syrup arises. Nevertheless, statistical sample allocation will give valuable hints to food database compilers.

Keywords: Sampling; Sample size; Variability; Statistics

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Food Composition Databases for Nutrition Labelling: Experience from Australia

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Food composition databases for nutrition labelling have some important differences compared to national food composition reference databases. This paper identifies some of the factors that need to be considered when preparing databases for food labelling purposes.

Before starting to prepare a database it is vital to understand the legal requirements for nutrition labelling of foods in your country, so that the database prepared will help users to meet these requirements. Factors to consider here include knowing the nutrients that must be declared and the definitions of nutrients that are required under the relevant food law (e.g. whether carbohydrates are reported by difference or by summation).

A database for nutrition labelling should present data for all the nutrients that must be included in labels in your country. As the number of nutrients included increases, the complexity of the database will increase. For example if you have to report sodium, you may need to include data for salted and unsalted versions of some ingredients, or if you need to report fatty acid contents you will need to include data for a wide range of oils and fats commonly used in food processing. The nutrient data need to be as up to date as possible and therefore it may be necessary to first update national food composition tables.

You should also have a good understanding of the types of food manufacturing that occurs in your country. Foods included should cover the types of ingredients used by manufacturers in your country. These ingredients may be common across many countries, such as white sugar, or may be unique to your region. Data for some food additives will also need to be included. In contrast to a reference or survey database, you are unlikely to need to include data for mixed dishes as would be prepared in the home.

There are some processing situations where use of a food composition database for nutrition labelling purposes will probably not be appropriate. These include for foods that are prepared by soaking or packing in salt and foods that are deep fried, where it is difficult to predict how much the total amount of sodium or fat would change. We also recommend, where a company makes a specific claim about a nutrient in their product (for example, that it is 97% fat free), that they verify this value by analysis of a representative sample of their product.

Apart from nutrient data, users of a food composition database for nutrition labelling will also

need information on typical measures (for example the weight of a litre of oil) and likely weight changes during processing so they can adjust for moisture loss and gain during processing. If vitamins are included, you will need to either provide data on nutrient retention factors or data for the same food prepared in different ways (e.g. boiling, frying) when this affects vitamin levels. The data also need to be prepared in a form that helps users to prepare reliable nutrition labels and to be accompanied by clear explanatory material that is appropriate to the skills and literacy level of your industry.

The nutrition labelling database prepared for Australia in 2001 has been very successful in helping companies, particularly small companies, prepare nutrition information panels for food labels. A large part of its success has been because we also provided users with an easy to use tool for calculating nutrients in mixed foods, the Nutrition Panel Calculator, and because we have provided ongoing assistance to users. However there is no research available to show whether nutrition information panels prepared from a food composition database are more or less accurate than panels produced from direct analysis of a food. The limited research that is available on the accuracy of nutrition labelling in Australia, regardless of the source of the nutrient data, suggests that data for proximate nutrients are more likely to be accurate than data for fatty acids. Within proximate nutrients, it seems that energy and protein are more likely to be accurate than total fat and total sugars values.

Preparing databases for nutrition labelling purposes is not easy and it is important that the scientists who prepare these databases are well trained and understand food production in their own country. The Australian experience has shown that it is possible to develop a database that will meet the needs of many, but not all, food processors, if you are prepared to commit time and money to the task. These resources will be needed not only to develop the database but also to provide assistance to users once the database is released.

Keywords: Nutrition labelling; Australia; Database

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