This comparison is simply an example of a small practical experiment. Many people consider that comparisons like these must always be performed on dry matter basis. But on the other hand, a very practical method of calculating recipes on wet weight with standard NLG factors is needed.

The NLG work is described in The National Food Administration report series, Rapport 32/94.

Comparison of calculated and analyzed values: antioxidant and fatty acid composition. L. Valsta,[a,b] M. Heinonen,[c] M. Anttolainen[a,b]* & M. Mutanen.[c]

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Most often the nutrient composition of a diet is calculated from food composition tables containing data from miscellanious sources. This can cause considerable variation in the results. Recently, new data based on food composition analyses of carotenoids, retinoids, tocopherols, tocotrienols and fatty acids in Finnish foods has been produced. To evaluate the differences in antioxidant and fatty acid data obtained by different methods, the compositions of three Finnish diets differing in their fat quality were estimated by calculation and by analyzing double-portions of the diets.

The diets were a saturated fat diet (milk fat, MF), a monounsaturated fat diet (rapeseed oil and margarine, RO), and a polyunsaturated fat diet (sunflower oil and margarine, SO). The diets contained the foods of 14–25 days' menus.

The analyzed values of the antioxidants and fatty acids were in general about 90% of the calculated values with some exceptions: The analyzed beta-carotene and retinol values of the oil diets (RO and SO) were only around 50–60% of the calculated values. The analyzed gamma-tocopherol contents for MF and SO diets were 120–180% of the calculated contents, but only 90% in case of the RO diet. The analyzed gamma-tocotrienol and delta-tocopherol values were about 2–8-fold compared to the calculated values.

The analyzed values of saturated fatty acids were 85–113%, monounsaturated fatty acids 65–89%, and polyunsaturated fatty acids 83-99% of the calculated values.

The reasons for the differences found between analyzed and calculated diet composition can be explained by: real differences in food composition (time, cultivar etc.), different enrichment procedures of margarines, food preparation losses, different analytical methods used, processing of the double portion sample, and possible inaccuracies, when nutrients present in small concentrations are analyzed.

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Freezing effect on carotenoid content in raw and cooked vegetables and fruits. B. Olmedilla,* F. Granado, E. Gil-Martinez & I. Blanco.

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Our aim was to evaluate one of the factors, freezing, that can modify the value of individual carotenoids content in foods and even the bioavailability of these compounds. With this study we try to improve the information available in the Food Composition Table/ Database and used in dietary assessment and large scale surveys.

The effect of freezing/thawing (at –20°C for 1 month under nitrogen atmosphere/16 h at 4°C and protected from light) was evaluated under two circumstances: before the analysis of the sample (situation frequent in many laboratories), as well as after being cooked for consumption (situation very common in households).

Several vegetables (green celery, white celery, tomato paste, leek and peas) and fruits (tangerine, medlar, green plum, avocado) were purchased in the market seasons and used for this study. Lutein, zeaxanthin, lycopene, β-carotene, a-carotene and β-cryptoxanthin content were determined by a validated HPLC method (Olmedilla *et al.*, 1990; Granado *et al.*, 1992), under different conditions of the sample: raw, raw-frozen, cooked and cooked-frozen.

The effect of freezing and thawing on individual carotenoid content, isomerization degree and biological activity is discussed, in the light of the presence of clorophylls and/ or carotenoid esters.

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Olmedilla *et al. J. Lig. Chromatog.*, **13**(8), 1455–83 (1990). Granado *et al., J. Agric. Food Chem.*, **40**, 2135–40 (1992).

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Carotendoids: new data needed in The Netherlands nutrient databank (NEVO). Corine J.M. Beemster, Karin F. A. M. Hulshof* & Susanne Westenbrink.

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In recent epidemiological studies positive health effects of some natural anti-oxidants has been observed. From this point of view there is an increasing interest in accurate data on several anti-oxidants, for instance carotenoids (such as β-carotene, lycopene and lutein).

In the Netherlands, data of the Dutch National Food Consumption Surveys carried out in 1987/88 and 1992 provide information on food consumption (2-day record), life-style and background variables. The data of the DNFCS can be converted into energy and nutrients using the Netherlands Food Nutrient Databank.