Effects of the revisions in the energy content of foods and diets in Poland resulting from consideration of dietary fibre. Hanna Kunachowicz, Włodzimierz Sekuła,* Zbigniew Niedziałek & Irena Nadolna.

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Data on the energy content of food products presented in Polish food composition tables is based on calculations including energy coefficients of proteins, fats and carbohydrates.

According to present practice the total sum of carbohydrates is taken into account in these calculations without allowance for dietary fibre. As a consequence results of these calculations are overestimated. The same applies to the energy content of diets assessed with the use of Polish food composition tables. Following Eurofoods recommendations the energy content of foods was revised by taking into consideration available carbohydrates instead of total carbohydrates. This revision resulted in the reductions of the energy content of diets as well. While the energy supply per capita in Poland calculated with the use of the former methodology was 3370 kcal/day, an allowance for dietary fibre reduced this value to 3240 kcal, i.e. by approx. 4%. The extent of the reductions in the energy content of the diets of various population groups varied, depending on the importance of foods rich in dietary fibre present in these diets.

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Conversion factors for fatty acids in The Netherlands nutrient databank (NEVO). Susanne Westenbrink,[a] Lidwien van der Heijden,[b] Marie Agnes van Erp-Baart[a] & Karin F. A. M. Hulshof.[a]*

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Total fat of foods, as determined by chemical analysis, is mainly composed of triglycerides. Other components of fat include phospholipids and sterols.

In food consumption studies and food labelling, detailed information is needed on fatty acid composition of foods. To meet the varying needs among users of food composition tables, the imput in the database should be as flexible as possible. Therefore the Netherlands Nutrient Databank (NEVO) has decided to include data on the proportions of individual fatty acid isomers (%), as well as the conversion factors for fatty acids.

In 1994, a literature search was conducted to make an inventory of all known conversion factors. For NEVO (1700 foods), for each food item a conversion factor was estimated based on a number of general criteria.

With these conversion factors the fatty acid content expressed in grammes per 100 g of each food item was calculated from the total fat content, for each fatty acid separately as well as for combinations of fatty acids.

Information is presented on the general criteria applied to estimate conversion factors for food groups and food items, as well as on the standardized way of obtaining the data on fatty acid isomers and on the practical implications of using fatty acid combinations.

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Intake of *trans* fatty acids in hypercholesterolemic subjects during four different fat-modified diets based on double portions. Essi Sarkkinen,[a]* Laura Rantalainen,[a] Irma Salminen[b] & Matti Uusitupa.[a]

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Altogether, 160 hypercholesterolemic subjects were randomized to follow four different fat-modified diets: 1. Control diet (butter) 35/14:10:4 [(source of visible fat) energy percent from total fat/saturated: monounsaturated: polyunsaturated fatty acids in actual diets]. 2. AHA type diet (sunflower oil and sunflower oil based margarine) 32/10:8. 3. Monoene-enriched diet (rapeseed oil and rapeseed oil based margarine) 34/11:11:5 and 4. Reduced-fat diet (butter–vegetable oil mixture) 30/12:8:3 for 6 months. Fat spreads, oils and liquid milk products were supplied free of charge for the subjects. A group of subjects (n = 22–23) in each diet group collected a double portion of all foods and drinks they used during one day in order to determine the fatty acid composition of the diets. Coffee, tea and tap water were not collected. Double portions were freezed after homogenization and addition of butyl-hydroxy-toluene extracted with ethanol (1 g/1000g). Double portions from the same diet group were pooled, and samples of the pooled mass were taken. Fatty acid composition of freeze-dried and homogenized samples were analyzed. After the extraction of lipids and transesterification the fatty acid compositions were determined by gas chromatography with a 60 m long SP-2380 polaric column using helium as carrier gas. The intake of *trans* fatty acids (% of total fatty acids) were for Control diet 1.2%, for AHA type diet 2.2%, for Monoene-enriched diet 1.7%, and for Reduced-fat diet 2.4%. In conclusion, the intake of *trans* fatty acids did not vary between oil-based diets and butter-fat based diets.

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Variation of trypsin inhibitor and crude protein in chickpea cultivars. Geoffrey Savage[a] & Helene Henmar.[a,b]

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Approximately 80% of all chickpeas (*Cicer arientinum* L.) are produced in the Indian subcontinent but some

cultivars can also be grown in temperate climates such as New Zealand. It is important in breeding and selection programmes to identify those cultivars that contain higher than average crude protein levels. It would also be an advantage from a human nutrition point of view to identify the cultivars that contain low levels of trypsin inhibitors as these antinutritional factors reduce the nutritive value of protein.

Fifty-six cultivars of desi-type chickpeas obtained from ICRISAT (International Crop Research Institute for the Semi Arid Tropics) were grown in the temperate climate of Canterbury, New Zealand in 1994.

The crude protein (N*6.25) and Kakade trypsin inhibitor (TI) contents of each sample of cleaned dried seed were measured in duplicate. The crude protein content (mean 21.03 g/100 gDM) ranged from 18.02 to 24.3 g/100 gDM while the TI contents (mean 4.06 mg/100 gDM) ranged from 2.17 to a high of 6.2 mg/100 gDM. No significant correlation could be established between these two important variables.

The data would suggest the need to address, in the next phase of database development, the variation in inhibitor concentration and crude protein content that can occur in legume seeds. The levels of trypsin inhibitors are important as they can influence the effective utilisation of the major nutrients in these foods.