

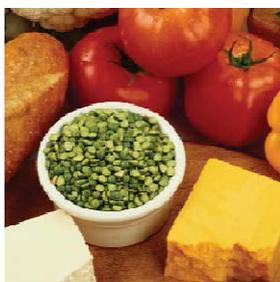
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FOOD-CT-2005-513944



Inventory of recipe calculation documentations of EuroFIR partners.

An annex to the report of 'Proposal for the harmonisation of recipe calculation procedures'.

### WP 2.2 Composite Foods





Project no.FP6 - 513944

EuroFIR

**EUROPEAN FOOD INFORMATION RESOURCE NETWORK**

Instrument: Network of Excellence

Thematic Priority: 5 – Food Quality and Safety

**WP2.2 Composite Foods  
Harmonisation of recipe calculation procedures (D2.2.12/M2.2.4)**

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<b>PU</b>	Public	
<b>PP</b>	Restricted to other programme participants (including the Commission Services)	X
<b>RE</b>	Restricted to a group specified by the consortium (including the Commission Services)	
<b>CO</b>	Confidential, only for members of the consortium (including the Commission Services)	

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## **Foreword**

Documented recipe calculation procedures are regarded as an important part of high quality management of food composition databases. This annex includes documentations from EuroFIR partner, which are currently using recipe calculation. The documentation is presented here as it is provided by partner. If more detailed information is needed, please contact the corresponding partner.

For following partners (NEVO, KTL, FRI, BFE, BGU, IFR, MATIS or former ICETEC) the used recipe calculation system is already described in the report: “Proposal for the harmonisation of recipe calculation procedures”.

## **NUBEL (P4)**

### **What software, if any, is used for recipe calculation?**

- In our Access database we can calculate recipes but we do not have the possibility to introduce correction factors for lost or retention of nutrients.
- We can also calculate recipes as individual portion with the Nubel Voedingsplanner which is a software programme to calculate nutrient intakes for individuals.
- The Nubel voedingsplanner is available on the Internet [www.nubel.be](http://www.nubel.be).

### **Do you use yield factors in recipe calculation? If yes: describe how you apply them in recipe calculation. Document used yield factors, if possible.**

No.

The publication about the yield factors is published by the Superior Health Council of Belgium. The Superior Health Council is the link between government policy and the scientific world in the field of public health. The council provides independent advice and recommendations to the Minister, on his specific request for information or on its own initiative. You can download the document on the website:

[https://portal.health.fgov.be/portal/page?\\_pageid=56,512429&\\_dad=portal&\\_schema=PORTAL](https://portal.health.fgov.be/portal/page?_pageid=56,512429&_dad=portal&_schema=PORTAL)

### **Do you use retention factor in recipe calculation? If yes: for what nutrient factors they are applied? Describe how you apply them in recipe calculation. Document used retention factors, if possible.**

No.

### **What sources are used for collecting recipes (cookbooks, website, field work etc.)? Document used sources, if possible.**

In the Access-database we have a few recipes. On the other hand, in the Nubel Voedingsplanner, one of our members has delivered several recipes including the list of ingredients.

### **What sources are used for converting household units to gram weights? Document used sources, if possible.**

The publication about the measures and weights is published by the Superior Health Council of Belgium. You can download the document on the website:

[https://portal.health.fgov.be/portal/page?\\_pageid=56,512429&\\_dad=portal&\\_schema=PORTAL](https://portal.health.fgov.be/portal/page?_pageid=56,512429&_dad=portal&_schema=PORTAL)

### **Do you have information about ingredients (the list of ingredients) in your database?**

**We have the possibility to import the amounts (exact weight) of ingredients into the calculation forms in the Access-database.**

With the Nubel voedingsplanner we can use the amounts (exact weight) of the ingredients but also the household measures and proportions.

**Do you have quantitative information about amounts of ingredients in your database? What type: weights, household measures, proportions etc.**

In our Access-database we only have the nutritional information of the ingredients by 100 g of product. The quantitative information about the amounts of ingredients is present in our software programme Nubel voedingsplanner.

**Do you have information about cooking method in your database?**

The cooking methods are present in our software programme Nubel voedingsplanner. We have the possibility to introduce the heat treatment into the Access Database.

## **Danish Food Composition Database (P7)**

### **What software, if any, is used for recipe calculation?**

Calculations are made within MS Access by proprietary code developed for the food composition databank.

### **Do you use yield factors in recipe calculation? If yes: describe how you apply them in recipe calculation. Document used yield factors, if possible.**

For the Danish food composition tables, only a few foods are calculated by recipes. All present recipes are very simple consisting of only a few ingredients. Yield factors for water and fat can be applied for the calculations, but are not used for any of the present calculated foods.

For the Danish dietary survey we have developed quite a large recipe collection. This recipe collection has yield-factors for fat and water, NLG-factors for vitamins and minerals and is well-documented with sources on recipes and market-shares. This recipe collection is not a part of the Danish food composition database.

### **Do you use retention factor in recipe calculation? If yes: for what nutrient factors they are applied? Describe how you apply them in recipe calculation. Document used retention factors, if possible.**

None of the present recipes needs to take preparation in account, so retentions factors are not used.

### **What sources are used for collecting recipes (cookbooks, website, field work etc.)? Document used sources, if possible.**

Recipes are developed in-house, but we consult cooking books and industry sources when needed.

### **What sources are used for converting household units to gram weights? Document used sources, if possible.**

For the present recipes household units has no importance.

### **Do you have information about ingredients (the list of ingredients) in your database?**

Not published.

## **AFSSA (P10)**

### **What software, if any, is used for recipe calculation?**

Excel spreadsheet

### **Do you use yield factors in recipe calculation? If yes: describe how you apply them in recipe calculation. Document used yield factors, if possible.**

Yield factors are used when there is a weight loss during cooking. We do not have our own list of yield factors, so must search literature (USDA). Yield factors are applied to moisture at recipe level.

### **Do you use retention factor in recipe calculation? If yes: for what nutrient factors they are applied? Describe how you apply them in recipe calculation. Document used retention factors, if possible.**

Whenever possible, we calculate a recipe without using yield or retention factors, i.e. by treating the recipe as an assembly of prepared (cooked) ingredients. When nutrient information is lacking on a cooked ingredient, then we are obliged to use retention factors to calculate its composition from the corresponding raw form. Retention factors are applied to nutrients at ingredient level. We do not have our own list of retention factors, so use factors from Bognár and USDA.

### **What sources are used for collecting recipes (cookbooks, website, field work etc.)? Document used sources, if possible.**

Sources for recipes:

- ingredient lists on food packages (often recipe calculation is used to provide values for nutrients beyond protein/fats/carbohydrates in prepared dishes)
- standard cookbooks
- French web sites

### **What sources are used for converting household units to gram weights? Document used sources, if possible.**

The Belgian FCDB publishes a very good book on weights and measures “Poids et mesures – Manuel de quantification standardisée des denrées alimentaires en Belgique”. Also, a consumption survey in France (SU.VI.MAX) published a book of pictures of food portions for their survey; at the end of the book, there is a table with the weights corresponding to the pictures.

### **Do you have information about ingredients (the list of ingredients) in your database?**

The FCDB has nutrient data on many household ingredients but not industrial ingredients. When we make a recipe for calculation, we record it in 2 FCDB tables: one for general information (name, reference(s), text field for cooking method etc.) and the other with a list of ingredients (recipe code, ingredient number, ingredient name, food code of ingredient in

FCDB, quantity). The same table is used for ingredient lists from packages, so it is necessary to record ingredients in order by weight as they are on the package.

**Do you have quantitative information about amounts of ingredients in your database? What type: weights, household measures, proportions etc.**

In the recipe/ingredient file, we record quantities in order to perform calculations. The quantity field is, however, not always filled – for example, quantities are not often given on food packages. Quantities are expressed in weight or percent of whole weight.

**Do you have information about cooking method in your database?**

This can be present in the recipe table, but is not often recorded...

## **NKUA (P15)**

### **What software, if any, is used for recipe calculation?**

UNIDAP (Unilever Dietary Analysis Program), Version UK03b, May 1988.

### **Do you use yield factors in recipe calculation? If yes: describe how you apply them in recipe calculation. Document used yield factors, if possible.**

Yield factors are used at the recipe level as follows: Each primary ingredient used (edible part) in the recipe was weighed. The recipe was then prepared (cooked) and the total weight of the cooked composite food was taken.

Example taken from the Greek Food Composition Tables:

Anchovies baked:

500g anchovies  
40g olive oil  
50g lemon juice  
50g water

Quantity of cooked food: 470g

Thus, yield factor = total cooked weight / total weight of row ingredients =  $470 / 640 = 0.73$

### **Do you use retention factor in recipe calculation? If yes: for what nutrient factors they are applied? Describe how you apply them in recipe calculation. Document used retention factors, if possible.**

Retention factors were not used in our recipe calculations.

### **What sources are used for collecting recipes (cookbooks, website, field work etc.)? Document used sources, if possible.**

The calculated recipes are either common recipes or were selected from cookbooks of wide use. Prior to their theoretical calculation, the recipes were cooked in practice and weighed to measure the actual loss or gain.

### **What sources are used for converting household units to gram weights? Document used sources, if possible.**

All weights have been recorded in grams using a scale.

**Do you have information about ingredients (the list of ingredients) in your database?**

All ingredients used in each recipe (including their weights) are listed in a separate section of the Greek Food Composition Tables.

**Do you have quantitative information about amounts of ingredients in your database? What type: weights, household measures, proportions etc.**

Yes, weights (see example above).

**Do you have information about cooking method in your database?**

No

## University College Cork UUC (P17)

### **What software, if any, is used for recipe calculation?**

WISP (Tinuviel Software)

### **Do you use yield factors in recipe calculation? If yes: describe how you apply them in recipe calculation. Document used yield factors, if possible.**

Yes – raw ingredients from McCance and Widdowson's are used. A weight loss is applied to the whole recipe based on the weight loss of a similar recipe in McCance and Widdowson's. (In McCance and Widdowson's, the weight of the raw dish was measured, the dish was then cooked and the dish reweighed). For example, if the weight loss for a plain omelette is 6% in McC&W, 6% weight loss would be applied to a similar omelette recipe in the Irish database.

### **Do you use retention factor in recipe calculation? If yes: for what nutrient factors they are applied? Describe how you apply them in recipe calculation. Document used retention factors, if possible.**

No – raw foods are entered in a recipe but no account for nutrient loss is considered.

### **What sources are used for collecting recipes (cookbooks, website, field work etc.)? Document used sources, if possible.**

Field work (websites rarely)

### **What sources are used for converting household units to gram weights? Document used sources, if possible.**

Ministry of Agriculture, Fisheries and Food (1997) *Food Portion Sizes*. London: HMSO.

### **Do you have information about ingredients (the list of ingredients) in your database?**

Yes, recipe can be opened to show list of ingredients, weights and cooking methods

### **Do you have quantitative information about amounts of ingredients in your database? What type: weights, household measures, proportions etc.**

Weights

### **Do you have information about cooking method in your database?**

Yes

## **CESNID (P26)**

### **What software, if any, is used for recipe calculation?**

Own developed software

### **Do you use yield factors in recipe calculation? If yes: describe how you apply them in recipe calculation. Document used yield factors, if possible.**

Yes, at recipe level. Factors are mostly from McCance and Widowson FCT.

### **Do you use retention factor in recipe calculation? If yes: for what nutrient factors they are applied? Describe how you apply them in recipe calculation. Document used retention factors, if possible.**

Yes, for vitamins and minerals. Mostly from the "USDA Table of Nutrient Retention Factors, Release 5 (2003)".

### **What sources are used for collecting recipes (cookbooks, website, field work etc.)? Document used sources, if possible.**

Cook books and books with industrial formulas:

Gianola C. Reposteria industrial: 1. La industria moderna de galletas y pasteleria. Paraninfo: Barcelona; 1993.

Humanes-Carrasco JP. Pastelería y panadería. McGraw-Hill: Madrid; 1999.

Marcos-Aguilar D. Embutidos crudos-curados españoles. Ediciones Ayala. Madrid; 1991.

Ortega S. 1080 recetas de cocina. Alianza Editorial: Madrid; 1994.

Yagüe-Gil A, Yagüe-Domínguez F. Preparación, fabricación y defectos de los embutidos curados. Ediciones Ayala: Madrid; 1992.

### **What sources are used for converting household units to gram weights? Document used sources, if possible.**

Data from the own database developed in the CESNID with the help of dieticians.

### **Do you have information about ingredients (the list of ingredients) in your database?**

Yes

**Do you have quantitative information about amounts of ingredients in your database? What type: weights, household measures, proportions etc.**

Weights

**Do you have information about cooking method in your database?**

Yes.

## **Norwegian Food Composition table (MVT-06), Uio (P22)**

### **What software, if any, is used for recipe calculation?**

KBS (KostBeregningsSystem), an in-house software mainly developed for nutrient calculation of dietary surveys was used for calculation of recipes included in the MVT-06. Unfortunately, the only published information we have on this system is a bit old and written in Norwegian, but you can find it at [http://www.med.uio.no/imb/nutri/pdf\\_filer/Rimestad-NE2000.pdf](http://www.med.uio.no/imb/nutri/pdf_filer/Rimestad-NE2000.pdf)

### **Do you use yield factors in recipe calculation? If yes: describe how you apply them in recipe calculation. Document used yield factors, if possible.**

Yes, we use yield factors at the recipe level. The most commonly used yield factors are listed on the MVT-06 website [www.norwegianfoodcomp.no](http://www.norwegianfoodcomp.no), see sub-chapter on 'Weight changes' under 'About the food groups'. Most of the factors are based on a Norwegian booklet from 1989 (see reference 6 on the web page); a few are from own cooking trials. The evaporation of water has been set at 15% and 12% during baking of home-made and industrially baked breads, respectively, while 3% has been used for the final baking of pre-baked rolls. These factors compare well with a Norwegian baking experiment, see reference 2 on the same web page.

### **Do you use retention factor in recipe calculation? If yes: for what nutrient factors they are applied? Describe how you apply them in recipe calculation. Document used retention factors, if possible.**

Yes, at the ingredient level for ten vitamins. Most of the factors we use are based on median values given by Bergström (1994) in her collation of international studies on vitamin losses during household preparation. A few are based on unpublished Norwegian tests. The factors are shown on the MVT-06 website as % loss instead of retention, see attachment named 'Vitamin losses' under 'About the food groups'. The baking experiment cited above also verified most of the factors used in recipe calculation of breads. Our procedure for estimating vitamin content in calculated recipes is semi-automatic: In KBS we have separate food codes for foods that may be used as ingredient in a recipe or eaten without any further treatment, i.e. for milk, vegetables, some fruits and berries, margarine, oils etc. For each food code and vitamin we have two value entries in the KBS database; the raw (analytical) value and 'as consumed'. Example: for milk used as a cold beverage the two values for vitamin B<sub>2</sub> are identical, whereas for milk used as an ingredient in a heat treated recipe (pancakes, white sauce etc), the B<sub>2</sub> value is reduced with 20%. The purpose for this design was originally to elucidate the difference in a dietary survey when the calculations were done with or without paying attention to cooking losses in the recipes. In the first nationally representative dietary study (Norkost, 1993-4) where amounts and frequency of use was asked in a self-administered questionnaire for 180 foods and dishes, we found a 12% lower value for vitamins B<sub>1</sub> and C after deduction of vitamin losses, whereas the values for retinol,  $\beta$ -carotene,  $\alpha$ -tocopherol and vitamin B<sub>2</sub> were only 1-3 % lower. All recipes to be included in the Norwegian food composition table published in 2001 (MVT-01) were calculated in KBS by this method. When transferring the

calculated results to the specific MVT-01 database the 'as consumed' values were used. No further changes with respect to recipes have been done in MVT-06.

The amount of salt used in cooking varies considerably according to personal taste and habit. Therefore, when making calculations for cooked vegetables, the amount of salt in the cooking water has been neglected. Standard sodium concentrations per 100 g prepared food have been used for cooked and fried meat and fish (500 mg) and for cooked rice and pasta (150 mg).

The fat content in cooked meat has been reduced in accordance with formulae from a Danish cooking experiments (Clausen I: Råt og tilberedt kød. Fedt, protein og svind. Fødevarer rapport nr 12. Fødevaredirektoratet. Søborg, 2000.).

**What sources are used for collecting recipes (cookbooks, website, field work etc.)? Document used sources, if possible.**

Most of the recipes have been taken from a standard cookbook (Hovig IE (red). Den nye rutete kokeboken. 3. utgave. Gyldendal Norsk Forlag. Oslo, 1996). Ingredient lists for calculated products and dishes are given on the MVT-06 website in the attachment named 'Recipes' under 'About the food groups'. Package information has been used to calculate the nutrient content of powder-based soups, sauces, casserole bases etc. Cooking fat has not been added for steaks and chops, partly because many people today use preparation methods that do not require additional fat, and partly because the Danish study cited above showed that only small amounts of frying fats adhere to unbreaded meat. For fried eggs and fish coated with flour before frying, 4 g of cooking fat has been used per 100 g uncooked food, while for rusk-breaded fried fish, 8 g of cooking fat is used. Any fat left in the pan that is used for gravy or sauce is added separately when entering consumption data in a survey.

**What sources are used for converting household units to gram weights? Document used sources, if possible.**

The amounts listed in the recipes are converted to net weight in grams using information on edible content in MVT-06, while household units and information about specific gravity are taken from the above mentioned booklet published in 1989.

**Do you have information about ingredients (the list of ingredients) in your database?**

All ingredients used for the MVT-06 recipes are included in the KBS database with both raw and 'as consumed' values for the ten vitamins, whereas MVT-06 contains only the raw vitamin values for foods that may be used in recipes, i.e. for uncooked meat and fish, milk, vegetables etc.

**Do you have quantitative information about amounts of ingredients in your database? What type: weights, household measures, proportions etc.**

Quantitative information about amounts of ingredients in the calculated recipes for MVT-06 are entered and kept in the KBS database as grams per 100 gram of cooked dish. In

addition, ingredient lists for calculated products and dishes are given in grams per full recipe in the attachment named 'Recipes' on the MVT-06 website as mentioned above.

**Do you have information about cooking method in your database?**

Cooking method is not entered in any of our databases as a separate entity, but may be found in the descriptive food names in MVT-06 or the even more detailed food description attached to the food code in KBS.

## **TUBITAK (P31)**

### **What software, if any, is used for recipe calculation?**

There are some private software's for simple recipe calculation.

### **Do you use yield factors in recipe calculation? If yes: describe how you apply them in recipe calculation. Document used yield factors, if possible.**

No.

### **Do you use retention factor in recipe calculation? If yes: for what nutrient factors they are applied? Describe how you apply them in recipe calculation. Document used retention factors, if possible.**

No.

### **What sources are used for collecting recipes (cookbooks, website, field work etc.)? Document used sources, if possible.**

Private recipe calculation programme: Bebis beslenme ve bilgi sistemi (Bebis nutrition and information system).

Books:

- Standart yemek tarifleri Toplu Beslenme yapılan kurumlar için. Prof. Dr. Türkan Kutluay Merdol Hatipoğlu Yayınevi Ankara 1994 2. Baskı (Standard cook recipe)
- Food composition and nutrition tables. Sauci- Fachmann-Kraut, CRC Press 2000.
- The composition of foods. Mc Cance R.A., Widdowson E.M. 1993.

Website:

- USDA

### **What sources are used for converting household units to gram weights? Document used sources, if possible.**

None

### **Do you have information about ingredients (the list of ingredients) in your database?**

No database.

### **Do you have quantitative information about amounts of ingredients in your database? What type: weights, household measures, proportions etc.**

No.

### **Do you have information about cooking method in your database?**

No.

## INRAN (P19)

### What software, if any, is used for recipe calculation?

Database	Calculation method	Note
Italian Food Composition Table	Not applicable	<u>All the data derive from chemical analysis</u>
Food consumption survey 2005-2006 INRAN-SCAI-2005-2006	Microsoft excel formulas	Composition per 1,000 g of cooked dish
Food consumption surveys 1980-84 & 1994-96 (INN-CA Study)	Calculation of eaten amounts by dieticians	Drafted documentation, examples

### Do you use yield factors in recipe calculation? If yes: describe how you apply them in recipe calculation. Document used yield factors, if possible.

YES

- 1) Published conversion factor (Carnovale & Marletta - Italian Food Composition Table, INRAN: 2000) (all food consumption pattern studies)
- 2) Collected measurements by previously carried out precise weight surveys (INRAN-SCAI 2005-2006 study)

### Do you use retention factor in recipe calculation? If yes: for what nutrient factors they are applied? Describe how you apply them in recipe calculation. Document used retention factors, if possible.

Generally, not used. In the INN-CA Study 1994-96, just water in boiled pasta and rice.

### What sources are used for collecting recipes (cookbooks, website, field work etc.)? Document used sources, if possible.

Approach: using a starting database (standard/referring recipes) updated when collecting items not yet included in the file.

Source	
Food labels	<ul style="list-style-type: none"><li>• All food consumption surveys (food labels DB or paper collection)</li><li>• Archives of products labels used to formulate samples for chemical analysis</li></ul>
Cookbooks	mainly "Il cucchiaino d'argento" in English "The silver spoon")
Recipes in nutrition books	"Mangiare meglio per vivere meglio" ( <i>Eat better, live better</i> )
Recipes magazines	Mainly "La cucina italiana" ( <i>Italian cuisine</i> ) "A tavola" ( <i>Around the table</i> ) "Sale e pepe" ( <i>Salt and pepper</i> ) "Cucina naturale" ( <i>Natural cuisine</i> )
Food consumption surveys 1980-84 & 1994-96 (INN-CA Study)	Ingredients file on paper archive

**What sources are used for converting household units to gram weights? Document used sources, if possible.**

<b>Study</b>	<b>Tool</b>
INRAN-SCAI 1005-2006:	Food units database Photographic book ad hoc built
INN-CA study 1994-96	Weighed household measurements (printed tables) whenever impossible to weight eaten foods.
INN-CA study 1980-84	Estimated by dietician whenever it was not possible to weight foods. Food labels.

**Do you have information about ingredients (the list of ingredients) in your database?**

**Do you have quantitative information about amounts of ingredients in your database? What type: weights, household measures, proportions etc.**

**Do you have information about cooking method in your database?**

<b>Database</b>	
Italian Food Composition Table	For composite foods the list of ingredients are keep stored on paper
Food consumption survey INRAN-SCAI-2005-2006	Calculation files keep stored (excel file)
Food consumption surveys 1994-96 (INN-CA Study)	DB IV files <u>Ingredients file</u> : code, name, raw weights (excl. non edible parts) <i>linked to the</i> <u>Recipe file</u> : recipe code, name, total raw and cooked weight, cooking method, number of ingredients, number of prepared portions
Food consumption surveys 1980-84	Ingredients file keep stored (DB III files)

## **NFNI (P23)**

### **What software, if any, is used for recipe calculation?**

Nutritive values of dishes and processed foods were calculated using the FOOD 3.0 software on the basis of cookbook recipes and manufacturing recipes.

### **Do you use yield factors in recipe calculation? If yes: describe how you apply them in recipe calculation. Document used yield factors, if possible.**

In order to calculate nutritive value of food from recipe we use yield factor of cooking process (taken from cookbook) or technological process (given by producers of processed food).

To each dish or processed product its own yield factor is ascribed. Based on the recipe of a dish or processed product proper amounts of ingredients to obtain 100g of ready-to-serve dish/complex product are calculated.

### **Do you use retention factor in recipe calculation? If yes: for what nutrient factors they are applied? Describe how you apply them in recipe calculation. Document used retention factors, if possible.**

Yes, we are using retention factors in recipe calculation. For energy values and content of most nutrients (with the exception vitamins) retention factor 0.90 is applied. The vitamin retention factors are presented in tables.

Retention factors for vitamins during cooking of dishes. (B1- thiamin, B2 – riboflavin, PP – niacin, A – retinol,  $\beta$ -car. –  $\beta$ -carotene)

Dish	Culinary process	B <sub>1</sub>	B <sub>2</sub>	PP	B <sub>6</sub>	C	A	$\beta$ -car.	E	Folate
Soup	cooking	0.70	0.90	0.90	0,90	0.50	0.90	0.90	0.90	0.50
Meat Fish	cooking	0.60	0.80	0.70	0.70	-	0.80	0.80	0.80	0.50
	frying	0.75	0.90	0.90	0.75	-	0.80	0.80	0.80	0.70
	stewing	0.70	0.90	0.90	0.70	-	0.80	0.80	0.80	0.50
Vegetables	cooking*	0.60	0.70	0.60	0.60	0.50	0.80	0.80	0.80	0.55
	stewing	0.80	0.90	0.90	0.90	0.70	0.80	0.80	0.80	0.45
	raw salads	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.80	0.95
	preserved	0.60	0.70	0.60	0.60	0.40	0.80	0.80	0.80	-
Potatoes	cooking*	0.70	0.90	0.75	0.75	0.25	0.80	0.80	0.80	0.50
Noodles	cooking*	0.75	0.75	0.80	0.80	-	0.80	0.80	0.80	0.50
Rice	cooking*	0.50	0.80	0.60	0.70	-	0.80	0.80	0.80	0.50
Groats	cooking*	0.80	0.90	0.90	0.80	-	0.80	0.80	0.80	0.50
Meat- vegetable dishes	stewing	0.70	0.80	0.80	0.70	0.80	0.80	0.80	0.80	0.50
Sauerkraut stewing with meat	stewing	0.50	0.90	0.60	0.70	0.20	0.80	0.80	0.80	0.20
Fruits	cooking	0.70	0.90	0.90	0.80	0.25	0.80	0.80	0.80	0.50
Milk	boiling	0.80	0.90	0.90	0.80	-	0.80	0.80	0.80	0.90

\*with decoction poured off

**What sources are used for collecting recipes (cookbooks, website, field work etc.)? Document used sources, if possible.**

Dish recipe come from cookbooks. For processed products data are obtained from published recipes, or by way of cooperation, directly from producers of these foods.

**What sources are used for converting household units to gram weights? Document used sources, if possible.**

We use recipes in which amounts of ingredients are given in g or kg. We do not convert them to household units.

The conversion of household units to gram presented in popular edition of tables entitled "Nutritive Value of Selected Food products and Typical Dishes".

**Do you have information about ingredients (the list of ingredients) in your database?**

Yes.

**Do you have quantitative information about amounts of ingredients in your database? What type: weights, household measures, proportions etc.**

In Polish database recipes of dishes and amounts of ingredients needed to prepare 100g of ready-to-serve dish are given. Recipes of processed products obtained from producer are confidential and are not available in database.

**Do you have information about cooking method in your database?**

Yes.

## **NFA (P29)**

### **What software, if any, is used for recipe calculation?**

We use the Swedish Food System (SFS) for all types of calculations, incl. recipe calculations.

### **Do you use yield factors in recipe calculation? If yes: describe how you apply them in recipe calculation. Document used yield factors, if possible.**

Yes. We apply yield factors on each ingredient. Very often we have information only on recipe level so the same factor is applied to all ingredients. However, we have exceptions; for items with low water content (salt, sugar, oil etc.) we always use yield factor 1. Yield factors are documented on ingredient level in the SFS. We use mainly NLG-factors (by Lena Bergström) as the source.

### **Do you use retention factor in recipe calculation? If yes: for what nutrient factors they are applied? Describe how you apply them in recipe calculation. Document used retention factors, if possible.**

Yes, for water soluble vitamins vitamin C, thiamine, riboflavin, B12, B6 and folate. We apply for retention factors at ingredient level and they depend on the cooking method, food group and the vitamin in question. Factors are documented at ingredient level in the SFS. A file with the factors we use now is attached but we are actually awaiting harmonized factors from EuroFIR and we will adjust our factors used in SFS according to EuroFIR recommendations.

### **What sources are used for collecting recipes (cookbooks, website, field work etc.)? Document used sources, if possible.**

Mostly cook books. Source is documented in the SFS for each recipe.

### **What sources are used for converting household units to gram weights? Document used sources, if possible.**

We mostly use a publication in Swedish "Mått för Mat". However, in the SFS density, portion size etc. is documented for each food item. The source for the information is also documented in the SFS.

### **Do you have information about ingredients (the list of ingredients) in your database?**

Yes

**Do you have quantitative information about amounts of ingredients in your database? What type: weights, household measures, proportions etc.**

Yes, mostly in weights but we also use household measures which are converted into grams by the SFS.

**Do you have information about cooking method in your database?**

Yes, and the retention factors used depend on the cooking method, food group and the vitamin in question

Information documented in the SFS is available on the web.

## **NNC (P42)**

### **What software, if any, is used for recipe calculation?**

For recipe calculation we are using Alimenta programme, version 4.2, 2004, from Food Research Institute, Bratislava. In the past we have used Alimenta, version 3.1, 1998.

### **Do you use yield factors in recipe calculation? If yes: describe how you apply them in recipe calculation. Document used yield factors, if possible.**

**Do you use retention factor in recipe calculation? If yes: for what nutrient factors they are applied? Describe how you apply them in recipe calculation. Document used retention factors, if possible.**

Yield factors and retention factor are using for recipe calculation.

### **What sources are used for collecting recipes (cookbooks, website, field work etc.)? Document used sources, if possible.**

The main source is Lithuanian cookbook "Vieningas lietuviškų tautinių, firminių patiekalų ir kulinarijos gaminių receptūrų bei technologijos aprašymų rinkinys", Vilnius, 1988.

### **What sources are used for converting household units to gram weights? Document used sources, if possible.**

We use Lithuanian tables for converting household units to gram weights.

### **Do you have information about ingredients (the list of ingredients) in your database?**

Yes, we have.

### **Do you have quantitative information about amounts of ingredients in your database? What type: weights, household measures, proportions etc.**

Yes, we have.

### **Do you have information about cooking method in your database?**

Yes, we have.