

# Trends in food availability in Belgium – the DAFNE III project

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## **Introduction**

The present report will focus on the analysis of three sets of raw food availability data, collected through the Belgian nationally representative household budget surveys (HBS) of 1987-1988, 1996-1997 and 1999. Those data were obtained from the Belgian National Institute of Statistics (NIS) under the framework of the DAFNE initiative, supported by the European Commission, through the Health Monitoring Programme of DG-SANCO, and co-ordinated by Prof. A. Trichopoulou (University of Athens).

As Belgium has not undertaken, since Second World War, a food intake survey representative for the whole country, the results obtained through this study can be used to estimate and describe the trends of nutrition behaviour of the Belgian population. Household budget surveys are not primarily designed for nutritional research. Nevertheless they can be used to estimate food availability at household (HH) level and establish trends in consumption and nutrition behaviour. As a consequence, they may constitute a tool for policy makers (Trichopoulou A *et. al.*, 2001) in order to define health & nutrition interventions. Similar studies are going on in some other European Countries joining the DAFNE initiative. To make information collected in the different countries comparable, a common food data bank has been created. The first results of this inter-countries study were published in the DAFNE I & II reports (Trichopoulou A, Lagiou P (eds), 1997 & 1998).

## Material – Methods

### Material

**The HBS 87/88<sup>1</sup>:** For practical reasons, the survey was undertaken in two periods: the first group (70%) from May 4<sup>th</sup> 1987 until May 3<sup>rd</sup> 1988 and the second (30%) from June 1<sup>st</sup> 1987 until May 31<sup>st</sup> 1988. Each household had to record in detail, during the whole year, all their incomes and expenditures, including the expenditures and quantities for all purchased food items. This detailed year record allows controlling for seasonal variation. A complementary survey was carried out among the HH members who received pocket money or those who managed independently all or part of their personal income. In the final results, 3,315 households were considered. This sample has been composed through a double hazard sampling in a stratified universe. The stratification followed the region and socio-professional criteria. For the published results, the extrapolation followed a combination of criteria: region, socio-professional status and the number of members of the HH.

**The HBS 96/97<sup>1</sup>:** Since 1995, HBS are carried out yearly in Belgium. The survey started on June 1<sup>st</sup>, 1996 and ended on May 31<sup>st</sup> 1997. During 11 months, 3,300 households recorded all their expenses that were higher than 1,900BEF (47.10 EURO) and during one month all their expenses (including food purchases) in detail. The detailed records were undertaken in different months in order to overcome seasonal influences. Each household member older than 14 years had to record all his/her income and expenditures. The sample was obtained by stratification made crossing the following criteria: region (Brussels, Flanders, Wallonia), the socio-professional status of the household head, the number of members of the HH, and the age of the person of reference.

**The HBS 1999<sup>1</sup>:** Starting from 1999, the HBS is carried out in parallel to the fiscal year in Belgium, hence beginning from January 1<sup>st</sup> until December 31<sup>st</sup>. 1/12 of the sample recorded all expenses and incomes in detail during one specific month of the year, taking into consideration

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<sup>1</sup> **Response rate:** In Belgium on average only a small group of households ( $\pm 10\%$ ) are willing to participate to such types of surveys. Acknowledging that within the different socio-professional categories this can vary between 5 and 30%, the National Institute of Statistics has contacted at random and per category an adjusted number of households in order to obtain a nationwide representative sample. Thereafter, although the absolute response rate varies around 10%, the actual response rate out of those who were selected and from whom reliable data were obtained varies around 80%.

seasonal influences and retroactively the bulk expenditures and incomes of the last three months. In 1999, 3,745 HH participated in the survey. The sample was stratified according to the following criteria: region, socio-professional status of the reference person, number of members of the HH and number of economically active persons in the HH. At the beginning of the survey 90 strata were identified. All other characteristics of the survey remained the same to the 1996-97 HBS.

## **Methods**

All food and related data of the 3 different HBS were gathered in the DAFNE database. Thereafter, they have been analysed following the DAFNE methodology described by Lagiou *et al.* (2001). For this purpose, the following classification criteria were used:

**Classification of food items:** Food items have been classified under the 15 main DAFNE groups, as well as under 56 specific groups (Lagiou *et al.*, 2001). This aggregation aims at having a common European classification that allows making comparisons between countries.

**Classification of education level of the household head:** Although the DAFNE methodology gives five levels of education, only three levels are going to be considered for the final Belgian output: Illiterate/Elementary, Secondary and Higher education. This is due to the fact that the Belgian categories of education level for 1999 did not allow classifying subjects under the DAFNE group 'Illiterate/Elementary education not completed'. It should also be noted that the Belgian category 'Other kind of education related to a professional activity' has been considered as 'elementary education' for the purposes of the present study.

**Classification of Locality (Urbanisation of the residence area):** In 1992 there was a fusion of Belgian communities so, the classification criteria used in the 1986-87 data were not anymore applicable. Therefore, new cut-off points were taken into account, in agreement with the Belgian National Institute of Statistics, using population density as the classification variable, instead of the number of inhabitants. The classification for locality based on population density (inhabitants/km<sup>2</sup>) used for the last two Belgian surveys, was:

- Rural                                    density  $\leq 100$
- Semi-urban                    101  $\leq$  density  $\leq 500$
- Urban                                    density  $\geq 501$

**Classification of occupation:** The two variables related to occupational status (according to the Belgian and ISCO classification respectively) were regrouped to fit into the four DAFNE categories: Manual, Non-manual, Retired and Other (students/housewives/unemployed/invalid persons).

**Converting food purchases into quantities:** One of the biggest limitations of the last two Belgian surveys (96/97 and 1999) is the fact that purchased food quantities were not anymore recorded, as this was not requested by EUROSTAT. Therefore, an approach (described by Remaut A.M. et al, 2001; Maertens K, 2001) has been developed in order to estimate quantities from the recorded purchase prices.

The estimation of food quantities based on recorded food prices has been done in the following way:

- As prices and quantities were both available in the 1987/88 data, an average registered food price/kg/food item has been calculated and compared with the average published retail food price/kg/food item published by NIS for the same period. It has been observed that, for purchases bigger than 5kg/year/HH, the average published retail price is an accurate estimation for most of the products. One should be careful when using it for seasonal products, namely those included under the DAFNE groups for fruits, vegetables and potatoes. For these seasonal food crops, more comparable results could be obtained by using the published average retail price of the month, during which the HH was undertaking detailed recording of all type of purchases. In the case of potatoes for example, it seems that the published average retail prices per kg do not take into account the bulk purchases of HH which reduce the average retail prices/kg.
- For the years 1996/97 and 1999, the average retail price/kg/food item has been calculated using published food retail prices of the appropriate time period. In cases where published food retail prices were not available, a survey was carried out in four different kinds of

retailers, in order to estimate the current average retail price. This retail price was afterwards adjusted by applying the price index of the respective year.

- The amount of food purchased by the HH for each of the recorded food items, has been estimated by converting the recorded purchase prices, spent per year for each of the food items, into quantities; using the average, adjusted, published retail price/kg of food (hereinafter called conversion factor).

## Results

Table 1 shows the mean daily individual availability of the DAFNE food groups, at household level in Belgium. Taking 1987/88 as baseline, the main observation is that availability of nuts, cereals, milk and milk products, alcoholic beverages, and juices **increased** in the period, while the average availability **decreased** in the following groups: eggs, potatoes and other starchy roots, pulses, meat, fruits and added lipids. Fish availability of 20g/person/day and sugar availability close to 55g/person/day remained steady during the time.

The data concerning the remaining groups suggest that there has been a slight increase of vegetable availability at household level in the studied period, while non-alcoholic beverages tend to decrease. However, focusing only on the last two surveys, the opposite can be observed for non-alcoholic beverages.

## Discussion <sup>2</sup>

**Food availability influenced by “education of the household head”:** Results presented in table 2, are based on data reported by 3,221 HH (out of the 3,235 HH participating in the 1987/88 survey); 2,038 HH (out of the 3,300 HH in the 1996/97 survey) and 3,708 HH (out of the 3,745 HH participating in the 1999 survey) that were respectively classified under the DAFNE educational groups [drop outs (less than 1%) were coming from different strata].

Table 2 shows that potato, egg, and meat consumption decreases over time and as the level of education increases. Cereal availability is observed to be always higher in the group of

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<sup>2</sup> Due to the large number of observations, all differences are statistically significant.

“elementary education”; nevertheless the difference of 52g in 1987/88 when compared to those households with higher education has been reduced to 38g in 1999. Milk and milk products availability, seems to remain steady within the group of elementary education (higher than 230g), at the same time it shows a slight increase within the group of secondary education (8 – 9g) and an important increase within the group of higher education (37g). Juices and alcoholic beverages increase over time and as level of education increases. For vegetable products, it has been observed that availability shows a common increasing trend in the more educated groups, while it drops down in the less educated group. When the two recent studies are compared, one can notice a rapid increase in availability of vegetables in all categories. This may be a result of the Belgian campaigns to improve vegetable and fibre intake. Fruit are less available among the three groups if compared with the 1987/88 data. In 1987/88 there was no difference between highly educated (168g) and elementary educated people (166g), while the secondary education group was eating less fruit (156g). Nevertheless, the recent data show that educated people are eating more fruit (134g) than those with elementary and secondary education (115g and 114g respectively). Despite the Belgian campaigns encouraging the improvement of fruit consumption, the observed trend is a reduction in fruit availability. This may be partially explained (1) by the fact that many Belgians think that drinking fruit juices is a good replacement of fresh fruit and (2) by the important increase in retail price. It is important to underline that a constant yearly increase in availability of sugar and sugar products has been observed among people with higher education. For the remaining two educational groups, an increasing trend was observed in the 1987/88 and 1996/97 data, followed by a slight decrease in availability in 1999.

**Food availability influenced by “urbanisation of the residence area”:** Table 3 shows that eggs, potatoes, meat, pulses, fruit and lipids average availability decreased with the years in all groups. The most important observed changes among these groups are:

- A shift in consumption pattern of eggs of people living in semi-urban from 0.40 pieces/person/day in 1987/88 to 0.20 in 1999. The consumption of eggs in rural areas remains higher than in other settings, and more or less steady (on average 0.27 pieces/person/day). The behaviour of people living in semi-urban settlements is likely to approach that one of those living in urban zones.
- Although the general average availability decreased in all groups, potatoes are always preferably consumed in rural areas. The gap between rural and urban areas has been

decreasing with time from 35g in 1987/88 to 11g in 1999. The behaviour of people living in semi-urban settlements is again likely to approach that of people residing in urban zones.

- The same pattern in meat availability is observed in the three surveys, people living in urban areas are generally buying less meat and meat products when compared with the other groups.
- It is observed that availability of fruits is less in rural households when compared with the other groups. In addition, urban and semi – urban areas show similar behaviour but the decrease is proportionally higher in the urban households. However, the gap between rural and urban settings decreased from 30g in 1987/88 to 18g in 1999.
- Added lipids follow the same pattern in the three observed periods. People living in rural settlements are using more added lipids (difference of 6g/day/person between rural and urban households) than the other groups, and this decreases as level of urbanisation increases.

On the other hand, Table 3 reveals that nut, milk and product, cereal and vegetable average availability generally increased over the years in most groups. The following changes have been observed.

- People living in semi – urban settlements are recently eating more cereals when compared with the other groups. Only rural households are decreasing their availability of cereals.
- In general, the observed trend is to increase milk and milk products availability at household level. People living in rural areas are consuming more milk and milk products when compared with the other groups. Availability of these products in semi – urban households increased constantly from 87/88 until 1999, remained almost steady between 1987/88 and 1996/97 for urban households and rapidly increased for 1999, probably showing the impact of the Belgian Nutrition Campaigns. However, the gap between categories has been reduced in the studied period and can be neglected from the nutritional point of view.
- The availability of vegetables follows a trend similar to that of milk and products. In late eighties, urban and semi – urban households were purchasing higher amounts of vegetables than those in rural areas, but lately the differences between groups are not important from the nutritional point of view.
- Concerning alcoholic beverages, it has been observed that a shift in consumption patterns has occurred. In fact in 1987/88, people in semi-urban and urban areas were purchasing more alcoholic drinks than those in rural areas (132 ml, 131ml vs. 108ml respectively). The level of alcohol consumption in semi – urban areas remained almost unchanged in the period with a

decreasing trend. Important increases have been observed in the urban and rural groups between 1987/88 and 1996/97 and thereafter a slight decrease in both groups. It is important to underline that a dramatic increase (50ml/person/day) has been observed among people living in rural settlements in the studied period. Finally, the last survey (1999) shows that people living in rural areas are more likely to drink fruit and vegetable juices. This is a change in behaviour with respect to the 87/88 survey, as they moved from being the weakest consumers (34ml in 87/88) of fruit and vegetable juices to be the strongest consumers of these products in 1999 (61ml). On the other hand, the other groups increased slightly their preference for these beverages.

**Food availability influenced by “occupation of the household head”:** The main differences are found among the “retired” group. In fact for all three years. retired people are consuming in average more potatoes, milk products, meat, vegetables, fish, fruits, lipids, alcoholic and non – alcoholic beverages and sugar products, while less of the other groups. Similar results are also found by the Belgian Health Survey (1997); where it is observed that the elderly, in comparison with the other population groups, are consuming more milk, sweetened products and lipids. The complete set of results are presented in table 4. However, according to 1999 data, non manual HH show an increased preference of milk (277g), non alcoholic beverages (507ml) and juices (68ml). This may be considered as a response to the Belgian campaigns promoting the consumption of milk and milk products, non alcoholic beverages, with special attention to water, together with the consumption of fruits, vegetables and whole-grain products.

**Food availability influenced by "Household Composition":** Results presented in tables 5a and 5b are based on data of 2,879 HH (out of 3,235 HH, in the 1987/88 survey), 1,846 HH (out of 3,300 HH, in the 1996/97 survey) and 3,493 HH (out of 3,745 HH, in the 1999 survey) were classified under the selected DAFNE groupings. As the average data are not weighted by age and sex (ex. children need to eat less than adults), it is logic that for example the average food availability/person in the HHs with children is underestimated. So, this variable should be used only to compare the tendencies within the different HH-groups. However, some findings can be underlined.

- Single HH are eating more eggs when compared with the other groups. This could be explained because this food item is easy to prepare. Single HH are consuming more nuts and cereals and, in general, less meat when compared with households with no children. The latter is consistent with common healthy eating patterns and recommendations.
- Elderly have more food available at household level, what is confirmed by the data obtained among the "retired" group. Hence it is likely that elderly people are eating less out of home, and keeping more stocks of food at home. Availability of meat among single elderly HH remained steady in the observed period, while decreased in the other categories. Availability of added lipids remained high (20g over the Belgian average for 1999). Our observation of fish availability higher than 25g is consistent with the findings of the SENECA study (Table 6).
- HH with children are purchasing less fats and oils and meat (more healthy dietary choices).
- Adult and elderly HH show a sustained increase in fish availability from 22g in 1987/88 to 34g in 1999.

### **Validation of the obtained results**

To check the validity of the Belgian results, the following data were taken into account:

#### **1. The Food Balance Sheets of Bel-Lux**

The average data for 1987 and 1988, the average data for 1996 and 1997 and the data of 1999, published by FAO (Table 7) have been compared with the respective averages obtained by the DAFNE-study. The following conclusions could be drawn:

- All obtained values are of similar magnitude with those published by the FAO; (conversion factor for eggs to be used: 1 egg weighs on average 55g)
- Trends in availability over time of the following groups are the same: Nuts, Cereals, Meat, Milk, Vegetables, Fish, Juices and Sugar;
- Differences in absolute values may be partially explained by the following facts:
  - the HBS does not record the foods taken out of home;
  - for certain food groups the losses during the distribution chain (from production unit to the market and then to the household) are quite important;

- the classification criteria for the lipid group was not done in the same way in both surveys;
- for alcohol consumption people are drinking in total less than before, but proportionally more at home and less outside.

## **2. The data of the Seneca study**

The SENECA study focused on the elderly population in order to determine differences in nutrition, lifestyle and health between European geographical areas and genders. The first baseline survey was carried out in 1989 and a follow-up in 1993. The latter provided data on the food patterns of elderly Europeans. The data of food intake was obtained through the diet history method. The reported food items were classified according to the EUROCODE system.

In order to undertake rough comparisons between the SENECA and the DAFNE food data, food availability values for 1993 were estimated by applying linear regression to DAFNE data. The reported values of the SENECA study are of the same magnitude of those obtained by the DAFNE data, as shown in Table 6. The SENECA study did not consider nuts, pulses and foods for special nutritional use, as those products were reported to be of rare use (this is also in accordance to what has been noticed in the DAFNE-study).

The differences between the values may be explained by:

- a. Different methodology for aggregating food products.
- b. Sample size.
- c. SENECA recorded "food intake" while DAFNE is estimating food availability in the household.
- d. the SENECA study was focused on the elderly population, while the DAFNE data refer to nationally representative population samples.

Considering trends, the SENECA study cannot be used as reference because the changes in food intake between the first study in 1989 and the follow-up in 1993 were not published. In brief, the values given by the DAFNE study show similar and consistent information as the one provided by the SENECA published results.

### **3. The data of the Belgian National Health study:**

Although the Belgian National Health Study does not provide data on food availability, it gives some scope to understand the DAFNE results. In the context of this validation study the Health Study's results could only be used to explain observed food patterns and behaviour, as only frequencies of consumption were recorded. Furthermore only the data of some specific food items were published, namely milk and milk products, fish, fruits and vegetables, white bread and fatty products.

### **4. The BIRNH Study**

The data of the HBS 1987/88 were compared with the BIRNH-study (1980-85). For most of the food groups similar average intake data have been recorded (DAFNE I report). Recently, the agreement between individual nutrition survey and household budget survey data has been reported indicating that correlations are good for most of food groups, except fish, in four European countries, including Belgium (Naska *et al*, 2001).

Based on those 4 comparisons, one could say that the DAFNE methodology applied to estimate daily individual food availability seems to be valid for most of the food groups. As Belgium does not have intake data for the whole population and for each of the three periods, it is not possible for the Belgian team to validate the obtained results in more detail.

### **Scope for future actions.**

1. Elaborating monthly conversion factors for the estimation of purchased quantities for fruit and vegetables and the re-estimation of their available quantities per household;
2. Elaboration for potatoes of a new price-quantity conversion factor + recalculation of their available quantity per household;
3. Calculation of the weighted average availability per person (weighted in function of age) when considering the different types of households;
4. Elaboration of a campaign promoting better eating patterns directed to the elderly and rural households.

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## **Acknowledgements**

The work presented was undertaken in the context of the DAFNE III project, supported by the Health Monitoring Programme of DG-SANCO of the European Union. Thanks are due to the Belgian National Institute of Statistics and in particular to Mr. Said Datoussaid and Mme. Véronique Renard for the provision of the raw data, as well as all the effort invested in our project.

**Table 1:** Overall mean food availability in Belgium, by survey year (quantity/person/day).

<b>Food Group</b>	<b>Mean availability</b>		
	<b>1987/88</b>	<b>1996/97 *</b>	<b>1999 *</b>
<b>Eggs (pieces)</b>	0,37	0,22	0,21
<b>Potatoes and other starchy roots (g)</b>	187	113	97
<b>Pulses (g)</b>	0.5	0.2	N/A
<b>Nuts (g)</b>	0.4	3.3	2.6
<b>Cereals and cereal products (g)</b>	220	232	238
<b>Milk and milk products (g)</b>	235	244	255
<b>Meat and meat products (g)</b>	166	139	127
<b>Vegetables (fresh and processed)(g)</b>	161	157	167
<b>Fish and seafood (g)</b>	21	20	21
<b>Fruits (fresh and processed) (g)</b>	161	132	123
<b>Total added lipids (g)</b>	43	32	29
<b>Alcoholic beverages (ml)</b>	127	141	135
<b>Non alcoholic beverages (ml)</b>	617	431	500
<b>Sugar and products (g)</b>	55	59	56
<b>Juices (fruit and vegetable) (ml)</b>	38	45	54

\* Estimations for quantities purchased for each of the different food items are based on the average year price/unit of weight or volume calculated on the basis of the NIS-published monthly retail prices.

N/A: Not available

**Source:** The Belgian National Institute of Statistics and the DAFNE databank.

**Table 2:** Mean food availability in Belgium, by locality of the dwelling and by survey year (quantity/person/day).

Food Group	Rural			Semi-Urban			Urban		
	87/88	96/97*	99*	87/88	96/97*	99*	87/88	96/97*	99*
Eggs (pieces)	0.31	0.24	0.27	0.40	0.21	0.20	0.28	0.22	0.21
Potatoes and other starchy roots (g)	194	135	107	190	111	98	159	112	96
Pulses (g)	0.4	0.2	N/A	0.5	0.1	N/A	0.6	0.2	N/A
Nuts (g)	0.3	2.7	2.6	0.3	3.1	2.8	0.5	3.6	2.5
Cereals and cereal products (g)	224	214	219	220	242	255	215	227	229
Milk and milk products (g)	246	276	260	230	242	252	243	240	257
Meat and meat products (g)	166	139	132	170	138	129	152	139	126
Vegetables (fresh and processed)(g)	142	137	171	164	148	163	180	167	170
Fish and seafood (g)	18	14	16	22	20	20	23	21	21
Fruits (fresh and processed) (g)	151	111	104	160	128	125	181	138	122
Total added lipids (g)	46	36	33	43	33	30	39	30	27
Alcoholic beverages (ml)	108	157	148	132	130	124	131	147	141
Non alcoholic beverages (ml)	568	439	411	622	407	496	667	450	510
Sugar and products (g)	59	71	61	54	61	56	57	55	55
Juices (fruit and vegetable) (ml)	34	43	61	38	42	54	43	47	54

\* Estimations for quantities purchased for each of the different food items are based on the average year price/unit of weight or volume calculated on the basis of the NIS-published monthly retail prices.

N/A: Not available

Source: The Belgian National Institute of Statistics and the DAFNE databank.

**Table 3:** Mean food availability in Belgium, by educational level of the household head and by survey year (quantity/person/day).

Food Group	1. Illiterate/ Elementary Education			2. Secondary Education			3. Higher Education		
	87/88	96/97*	99*	87/88	96/97*	99*	87/88	96/97	1999
Eggs (pieces)	0.47	0.23	0.23	0.36	0.22	0.21	0.26	0.20	0.20
Potatoes and other starchy roots (g)	245	115	132	183	128	103	127	91	81
Pulses (g)	0.6	0.2	N/A	0.3	0.2	N/A	0.6	0.1	N/A
Nuts (g)	0.3	2.0	1.8	0.3	3.0	2.5	0.5	4.3	3.1
Cereals and cereal products (g)	247	260	270	219	232	236	195	219	232
Milk and milk products (g)	238	240	233	229	237	236	248	255	284
Meat and meat products (g)	193	156	152	162	143	130	147	125	117
Vegetables (fresh and processed)(g)	165	144	162	156	155	163	171	166	175
Fish and seafood (g)	19	18	20	20	20	19	26	20	22
Fruits (fresh and processed) (g)	166	124	115	156	128	115	168	141	134
Total added lipids (g)	52	38	36	42	33	29	35	27	26
Alcoholic beverages (ml)	118	122	127	127	138	119	139	154	155
Non alcoholic beverages (ml)	663	390	463	612	439	489	575	438	524
Sugar and products (g)	61	64	56	54	59	54	50	56	57
Juices (fruit and vegetable) (ml)	26	27	37	37	46	46	52	52	68

\* Estimations for quantities purchased for each of the different food items are based on the average year price/unit of weight or volume calculated on the basis of the NIS-published monthly retail prices.

N/A: Not available

Source: The Belgian National Institute of Statistics and the DAFNE databank.

Eggs (pieces)	0.54	0.19	0.18	0.26	0.20	0.19	0.40	0.31	0.27	0.31	0.20	0.23
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Food groups	Manual			Non manual			Retired			Other**		
	87/88	96/97*	99*	87/88	96/97*	99*	87/88	96/97*	99*	87/88	96/97*	99*
Potatoes and other starchy roots (g)	188	100	87	142	91	82	238	166	142	219	142	107
Pulses (g)	0.27	0.15	N/A	0.48	0.12	N/A	0.59	0.24	N/A	0.50	0.20	N/A
Nuts (g)	0.26	2.89	2.58	0.36	4.12	2.88	0.40	2.80	2.59	0.39	2.55	1.90
Cereals and cereal products (g)	227	221	223	201	221	230	247	288	294	213	185	200
Milk and milk products (g)	213	217	226	233	246	277	265	292	265	218	240	233
Meat and meat products (g)	161	129	122	151	125	114	193	182	167	167	131	119
Vegetables (fresh and processed)(g)	132	126	142	151	157	165	203	223	217	158	139	156
Fish and seafood (g)	16	16	18	21	19	19	26	32	30	18	15	17
Fruits (fresh and processed) (g)	137	101	95	145	131	121	211	201	182	145	95	88
Total added lipids (g)	41	28	25	36	25	24	55	50	46	43	31	27
Alcoholic beverages (ml)	110	105	113	121	136	123	160	205	206	100	164	105
Non alcoholic beverages (ml)	554	404	511	565	436	507	754	494	498	600	369	435
Sugar and products (g)	52	54	49	49	54	54	68	79	70	52	51	56
Juices (fruit and vegetable) (ml)	35	41	51	45	53	68	32	39	35	31	42	44

**Table 4:** Mean food availability in Belgium, by occupation of the household head and by survey year (quantity/person/day).

\* Estimations for quantities purchased for each of the different food items are based on the average year price/unit of weight or volume calculated on the basis of the NIS-published monthly retail prices.

\*\* Other: Students/Housewives/Unemployed/Invalid persons.

N/A: Not available

Source: The Belgian National Institute of Statistics and the DAFNE databank.

**Table 5a:** Mean food availability in Belgium, by household composition and by survey year (quantity/person/day).

Food groups	Single Adult Household			Adult HH-2 members			Adult + children (lone parents)			Adult + Children		
	87/88	96/97	99	87/88	96/97	99	87/88	96/97	99	87/88	96/97	99
Eggs (pieces)	0.79	0.29	0.28	0.37	0.29	0.25	0.25	0.18	0.14	0.32	0.16	0.17
Potatoes and other starchy roots (g)	187	128	106	242	138	111	142	78	60	164	89	83
Pulses (g)	0.71	0.17	N/A	0.55	0.16	N/A	0.26	0.29	N/A	0.35	0.11	N/A
Nuts (g)	0.58	6.58	3.16	0.41	3.72	2.92	0.33	3.41	1.46	0.29	2.85	2.52
Cereals and cereal products (g)	266	267	256	257	252	255	167	195	165	202	210	219
Milk and milk products (g)	272	287	280	244	243	248	202	284	217	226	232	263
Meat and meat products (g)	176	151	127	205	161	155	129	96	85	146	118	108
Vegetables (fresh and processed)(g)	218	212	216	204	201	214	117	111	101	128	121	140
Fish and seafood (g)	28	24	22	29	25	27	12	10	12	17	14	17
Fruits (fresh and processed) (g)	221	180	156	202	168	146	96	75	67	128	98	99
Total added lipids (g)	54	41	34	52	40	35	32	19	16	36	23	21
Alcoholic beverages (ml)	172	258	203	162	188	184	63	58	69	103	94	93
Non alcoholic beverages (ml)	845	638	666	761	506	578	528	409	372	508	374	457
Sugar and products (g)	69	66	64	61	68	59	46	59	47	49	49	51
Juices (fruit and vegetable) (ml)	54	68	60	34	44	54	53	47	50	42	50	62

\* Estimations for quantities purchased for each of the different food items are based on the average year price/unit of weight or volume calculated on the basis of the NIS-published monthly retail prices.

N/A: Not available

Source: The Belgian National Institute of Statistics and the DAFNE databank.

**Table 5b:** Mean food availability in Belgium, by household composition and by survey year (quantity/person/day).

Food group	Adult + Elderly			Adult + Elderly + Children			Single Elderly HH			Elderly HH - 2 members		
	87/88	96/97	99	87/88	96/97	99	87/88	96/97	99	87/88	96/97	99
Eggs (pieces)	0.36	0.28	0.28	0.19	0.08	0.19	0.39	0.37	0.30	0.32	0.26	0.23
Potatoes and other starchy roots (g)	193	176	133	112	216	58	219	182	147	215	152	139
Pulses (g)	0.44	0.23	N/A	0.75	0.00	N/A	0.41	0.34	N/A	0.65	0.08	N/A
Nuts (g)	0.32	4.78	3.39	0.37	2.54	1.64	0.50	2.53	3.38	0.28	2.26	1.52
Cereals and cereal products (g)	220	248	279	181	152	228	249	322	357	239	282	269
Milk and milk products (g)	216	257	255	215	228	190	293	321	281	252	272	250
Meat and meat products (g)	179	174	169	117	116	96	177	185	178	182	174	153
Vegetables (fresh and processed)(g)	175	212	224	122	109	96	218	245	211	190	199	206
Fish and seafood (g)	22	26	34	15	16	16	28	35	26	25	35	29
Fruits (fresh and processed) (g)	171	192	155	126	82	80	233	224	197	212	197	201
Total added lipids (g)	49	48	47	35	31	15	51	53	49	56	45	44
Alcoholic beverages (ml)	159	190	226	79	147	62	151	233	208	183	190	214
Non alcoholic beverages (ml)	644	409	493	469	336	425	857	557	561	739	460	458
Sugar and products (g)	62	72	65	44	50	42	74	88	73	64	75	75
Juices (fruit and vegetable) (ml)	25	31	34	38	26	39	29	35	31	20	28	30

\* Estimations for quantities purchased for each of the different food items are based on the average year price/unit of weight or volume calculated on the basis of the NIS-published monthly retail prices.

N/A: Not available

Source: The Belgian National Institute of Statistics and the DAFNE databank.

**Table 6:** Comparison between the SENECA and the DAFNE results for Belgium

<b>SENECA (Average men &amp; women)</b>	<b>DAFNE (Estimated by linear regression for 93)</b>
Eggs: 9.5 g/caput/day	Eggs: 16.8 g/person/day.
Meat: 149.5 g/caput/day	Meat: 148.24 g/person/day
Milk: 241 g/caput/day	Milk: 242.17 g/person/day
Fish: 29 g/caput/day	Fish: 20.63 g/person/day
Fats: 56 g/caput/day	Lipids: 36.13 g/person/day
Grain: 209.5 g/caput/day	Cereals: 228 g/person/day
Vegetables: 357 g/caput/day	Vegetables: 304.014 g/person/day by adding vegetables +potatoes
Fruit: 174 g/caput/day	Fruit: 143 g/person/day
Sugars: 46.5 g/caput/day	Sugar: 56.36 g/person/day

**Source:** SENECA Average (own calculations) based on K. Scroll et al.(1996)  
The DAFNE databank

**Table 7:** Average food availability in Belgium and Luxembourg.  
Data retrieved from the FAO Food Balance Sheets (g/person per day)

<b>Food groups FAO</b>	<b>1987/1988 average</b>	<b>1996/97 average</b>	<b>1999</b>
Eggs	34.25	36.99	39.45
Potatoes	280.55	287.12	294.25
Pulses	7.95	6.58	6.58
Nuts	7.95	12.33	11.51
Cereals	279.18	288.49	294.52
Milk products	529.86	594.25	600.00
Meat	253.70	228.77	230.14
Vegetables	247.12	356.71	406.03
Fish	50.68	55.62	55.34
Fruits	277.26	347.95	302.74
Lipids	133.42	146.85	141.92
Alcoholic bev.	407.67	378.90	343.29
Non-alcoholicbev.	NA	NA	NA
Sugar products	113.97	131.78	137.26
Juices	NA	NA	NA

Source: <http://www.fao.org> - Food Balance Sheets, 2001

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