

## Trends in food availability in Portugal – the ANEMOS project

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### **Introduction**

It is generally acknowledged that the capacity to develop effective food and nutrition policies is primarily dependent upon the availability of reliable, measurable and comparable data (Lang 1999; WHA 2004; Van der Wilk and Jansen 2005).

Unfortunately in Europe and in the particular case of Portugal as well, the sources of comparable dietary data are limited.

The long work developed under the Data Food Networking (DAFNE) project has indicated that the use of Household Budget Surveys (HBS) data for nutritional purposes is highly cost-effective; being a reliable alternative source for monitoring within and between countries food patterns (Margetts and Nelson 1997; Boyle and Morris 1999; Trichopoulou et al. 2003).

Household food availability records from HBS are positioned halfway between the global information given by the Food Balance Sheets (FBS) and the individual-based consumption data retrieved from dietary surveys. Although primarily collected for economic reasons, the HBS-derived information can also be used for nutritional purposes as it allows the assessment of trends in food habits and the identification of population sub-groups whose dietary habits are not favourable to health.

In the context of the Portuguese participation in the DAFNE project, data from the 1990, 1995 and 2000 HBS were analysed (Rodrigues et al. 2007). The aims of this report are to present the results of the new 2005 HBS data analysed under the current ANEMOS project (ANEMOS - Expansion and update of existing nutrition monitoring systems); to provide an insight on possible trends and socio-demographic disparities in Portuguese food habits and comparing them to those of other European countries.

## **Methodology**

Representative samples of the population were addressed by the National Statistical Institute (INE) in the HBS collected in 1990, 1995, 2000 as well as the most recent data from 2005.

The data collection was conducted in 12.403 households in 1989/1990, 10.554 in 1994/1995, 10.020 in 2000/2001 and 10.403 in 2005/2006.

Each member of the household completed a diary, where all the food and beverages purchased (also including the contribution of the household's own production and food items received as gifts) were registered, during one week in 1990 and two weeks in 1995, 2000 and 2005. Subsequently, the recorded food and beverages were grouped according to a pre-defined list of approximately 500 codes. So as to capture seasonal variability, the data were collected during a 12-month period. Detailed methodological information on the Portuguese HBS can be found elsewhere (INE 1990, 1997, 2002, 2008).

The data cleaning, management and analysis was conducted in compliance with the DAFNE procedures (Lagiou et al. 2001) and the DAFNE food classification scheme (European Commission DG-SANCO 2005). The household daily availability was divided by the household size and estimated for 15 main food and beverage groups.

The establishment of the operational criteria and procedures for combining the collected information, iterative cross-coding, work meetings and a bilateral visit to solve specific problems were required for the data's harmonisation process.

Besides the overall population, results were also estimated in terms of residence area (grouped as rural, semi-urban and urban), educational attainment (classified as illiterate/elementary, secondary and higher), occupation of the head of the household (grouped as workers - manual and non-manual, retired, unemployed and others) as well as household composition (1 adult, 2 adults, 1 elderly, 2 elderly, 1 adult with elderly, adults with elderly and children, one adult with children, two adults with children, and others).

Finally, the Portuguese data were compared to those of other countries referent to the most recent years (around 2005), which were available at the Dafne-AnemosSoft application ([http://www.hhf-greece.gr/anemos\\_eng.html](http://www.hhf-greece.gr/anemos_eng.html)).

## **Results**

### **Trends in the household availability of foods and beverages (years 1990-2005)**

Table 1 provides the mean daily individual availability of foods and beverages among nationally representative samples in 1990, 1995, 2000 and 2005.

For great part of the food/beverage items, a decrease of the daily per person availability in the household was found. There was, however, an increase of the availability of non-alcoholic beverages, nuts, milk and milk products and especially of fruit and vegetable juices.

From 1990 to 2000, meat, meat products and dishes and fish, seafood and dishes became more available. However, the 2005 data reveal that the availability of these food items suffered a decrease, reaching practically the same values as in 1990.

### **Socio-demographic disparities in the household availability of foods and beverages**

The results presented in tables 2, 3, 4, 5 and 6 allude only to the most recent data (2005) and the results from 1990.

#### *Locality of the household*

The mean daily per person availability of the main food and beverages by locality are presented in table 2. Similar patterns were found between household's availability as the rural and urban areas were compared for both years 1990 and 2005. A lower availability of cereals, potatoes, pulses, vegetables, nuts, total added lipids, sugar and sugar products and alcoholic beverages was recorded among the more urbanized households. The opposite trend was visible for fruit, milk and milk products, non-alcoholic beverages and fruit and vegetable juices, which tended to be less available in rural households.

Although in 1990 the availability of meat, meat products and dishes, fish, seafood and dishes was greater in urban rather than rural households, different results were found for the 2005 data. The disparity between the average per capita availability of these protein suppliers available by locality seems to have narrowed, as in 2005 practically no difference in the availability of these food items between urban and rural areas was found. In relation to the availability of eggs, although almost no differences by locality were found in 1990, the situation has changed - a greater availability was observed in the urban households in 2005.

#### *Education of the household head*

The mean daily per person availability of foods and beverages by educational level of the household head is provided in table 3. Generally, the head of the households who had a higher level of education, reported for both year 1990 and 2005, a higher availability of fruit, nuts, eggs, milk and milk products, non-alcoholic beverages as well as fruit and vegetable juices. On the other hand, still regarding both years, those who had a lower level of education, purchased greater quantities of cereals, potatoes, pulses, added lipids and alcoholic beverages. With respect to vegetables and fish and seafood, practically no differences were observed between the different categories regarding the two years analysed.

Meat, meat products and dishes as well as sugar and sugar products were the only food items, for which a different trend was found in each year. As regards meat, meat products and dishes, in 1990 similar availability values were recorded for both elementary and high categories of education. However, in 2005, a reduction was apparent within the group consisting of people with a higher level of education. Concerning sugar and sugar products, the difference in their daily per person availability by educational level in 2005 was practically non-existent.

#### *Occupation of the head of the household*

The mean daily per person availability of foods and beverages divided by occupational status of the head of the household are shown in table 4 and the differences between groups are illustrated in figures 1 and 2.

For both years 1990 and 2005 the availability of cereals, potatoes, pulses, vegetables, fish, seafood and dishes, added lipids, sugar and sugar products and alcoholic beverages was greater where the head of the household was retired. However, note that in general this group acquired higher quantities of food/beverages in 2005 (even of vegetables and fruit) than in 1990.

Although in 1990 the retired group purchased less meat, meat products and dishes, milk and milk products and more fruit and eggs than workers, the 2005 data show different results.

Even though the highest availability of nuts and non-alcoholic beverages was registered in 1990 within the group formed by those retired, this divergence between the two categories was not observed in the latest data.

#### *Composition of the household*

The mean daily per person availability of foods and beverages by composition of the household in 1990 and 2005 are presented in tables 5 and 6. The groups “one adult” and “two adults” were compared with the groups “one elderly” and “two elderly”, respectively (figures 3 and 4).

With respect to figure 3, the most eye-catching divergence in 1990 was related to fruit and vegetable juices and nuts, which were substantially more available in the one elderly person households. In addition, a great part of the remaining food and beverages existed in smaller amounts in these households. In 2005 the variation between the two groups narrowed.

Concerning figure 4, the most noticeable aspect was the fact that in 1990 households consisting of two elderly people purchased lower quantities of most of the food and beverages groups, when compared to adult couples. Moreover, in 2005 cereals, potatoes, fruit and vegetable juices, pulses, vegetables, eggs and sugar and sugar products became slightly more available in the households of elderly people.

#### *Comparison with other countries*

The mean daily per person availability of food and beverages in various European countries in 2004 and 2005 are presented in table 7. A comparison between these

countries' data and Portugal's is illustrated in figure 5. The reference line represents the mean daily availability in Portugal regarding the 2005 data. To refer to the other countries, different shaped and coloured markers were used. When positioned in the inner circle area, these markers represent the country's lower availability of a specific food or beverage group compared to Portugal. When these markers are found in the outer circle, it indicates that the country had a higher availability of a certain food or beverage group than Portugal.

With respect to cereals, the availability was greater in all other countries than in Portugal.

Latvia and Montenegro were the countries where potatoes existed in larger quantities.

The decrease of the daily per person availability of pulses in Portugal from 14g/p/day in 1990 to 5.72g/p/day in 2000 appears to have placed it among the countries with the lowest values of this food. The same was recorded regarding vegetables and eggs, as their availability in Portuguese households in comparison with these countries is the lowest, according to the most recent data. Concerning fruit and nuts, Portugal holds an intermediate position.

Meat, meat products and dishes appear to be available in approximately the same quantities in the various countries. Nevertheless, fish, seafood and dishes were purchased in higher amounts in Portuguese households.

Portugal is among the countries with the lowest daily per person availability of added lipids, sugar and sugar products, non alcoholic beverages and fruit and vegetable juices. Despite the decrease of alcoholic beverages from 190 ml/p/day in 1990 to 88 mL/p/day in 2005, Portugal remains among the countries with highest availability, with regard to this product.

## **Discussion**

The data presented in this report was collected in the years 1990, 1995, 2000 and 2005. The main focus was on the differences observed between 1990 and 2005 in terms of the different categorizations – degree of urbanization, level of education, occupational status and composition of the household.

In Portugal, a general decrease of the availability of most food and beverage groups was observed between 1990 and 2005, with the exception of non-alcoholic beverages, nuts, milk and milk products, as well as fruit and vegetables juices. One of the possible explanations for this overall decrease may be that people are eating out more often nowadays than they used to. Thus, the trends noticed in Portugal reflect the increasing contribution of eating out in the daily food intake, as observed and described among other populations (Clauson 1999; Gracia and Albisu 2001). The fact that out of home consumption is not considered is one of the HBS's limitations and must be taken into account when interpreting the results.

An interesting finding was that the increase in availability of meat, meat products and dishes and fish, seafood and dishes between 1990 and 2000 did not occur again in 2005. In fact, the results have become very similar to those of fifteen years ago.

Although Portugal's economic development and society have undergone great changes, disparities in household availability by socio-demographic characteristics have generally remained consistent over the years.

It is interesting to notice that the availability of food and beverages in the homes of retired people remains higher over time, when compared to those of workers. In several, if not all, European countries, retired individuals report higher food acquisition, which can either reflect a less frequent habit of eating out of home or the habit acquired over time of preparing food at home for their children.

The dietary pattern in Portugal was compared to that of Slovenia, Greece, Latvia, Montenegro and Serbia since these are the countries with data from the years closest to 2005.

Compared to these countries, Portugal had the lowest availability of cereals (210g/p/d), vegetables (142g/p/d), eggs (0.17g/p/d) and meat, meat products and dishes (145g/p/d). A favourable finding was that the highest values of fish, seafood and dishes were reported in Portugal (75g/p/d). On the other hand, a negative aspect was that Portugal was among the countries with the highest availability of alcoholic beverages (88g/p/d).

A general decrease of the availability of most food groups, which characterize the Mediterranean food pattern, has become more and more evident in Portugal,

suggesting a departure from the original basis of the Mediterranean diet. The westernization of the Mediterranean countries' food habits has also been reported by others (Garcia-Closas et al. 2006, Trichopoulos and Lagiou 2004).

A healthier tendency can be observed in the increase of fruit and vegetable juices (+673%), nuts (+22%), milk and milk products (+9%) and the decrease in the availability of sugar and sugar products (-44%), added lipids (-35%) and alcoholic beverages (-54%), although particularly the latter continues to be present in too high quantities. As seems to be the inclination in other countries and reported to be the case of Portugal in 1990, the availability of this kind of beverages tends to be lower in urban (-29%) than in rural areas in 2005. Moreover, it is noteworthy that in 1990 there was a great difference between the availability of alcoholic beverages between those who had an illiterate/elementary education and people with a higher education. Indeed, there was a much lower availability among the latter (-53%). However, the difference narrowed in 2005 (-16%).

The results in this report support the generally accepted finding that a higher education leads to making healthier eating choices. In 2005, the individuals that had achieved a higher level of education purchased more frequently: fruit and vegetable juices (+93%), milk and milk products (+30%), fruits (+23%), nuts (+8%) and less: meat, meat products and dishes (-15%), added lipids (-20%), alcoholic beverages (-16%) and sugar and sugar products (-8%). Concerning this last group, the difference in 1990 was much greater between the two categories (-41%) – higher education and Illiterate/elementary education - than it is presently.

The HBS-based results presented in this analysis have the strengths inherent to the use of nationally representative population samples, and of a methodology, which allows throughout time and between countries comparisons. In addition, in the case of Portugal, the HBS records are currently the nationally representative data closest to the reality of actual consumption. However, HBS are not specially designed for nutritional purposes and thus information retrieved from them needs to be cautiously interpreted.

Despite methodological restrictions, using HBS data also for nutritional purposes has proved to be possible and highly cost-effective. Furthermore, previous work comparing different level of data collection showed that the average daily per capita

amounts recorded in Portuguese HBS data were in the expected position, below the national supply from FBS and much closer to individual derived dietary data from food frequency questionnaires (Rodrigues et al. 2007). Besides, HBS data could also depict variation in Portuguese regional food and nutrient patterns, which revealed to be related and probably explain part of the differences in regional cause-specific mortality rates from diet related diseases (Rodrigues et al. 2008).

The capacity to develop effective food and nutrition policies is first of all dependent upon the existence of reliable, measurable and comparable data (WHA 2004; Trichopoulou et al. 2001). By improving the understanding of food availability patterns and factors affecting them amongst European countries, the DAFNE-ANEMOS databank provides crucial information for food and nutrition policies planning, implementation and evaluation, contributing for evidence-based food and nutrition policies.

## **Conclusion**

The participation in the DAFNE and ANEMOS projects has been of particular importance for Portugal. The integration of Portuguese household budget survey records into a European database under the rules of a standard protocol has done more than merely contribute to provide a better knowledge of its trends concerning food habits at a national level, regarding important socio-economic variables. Indeed, it has also enabled the comparability of the Portuguese dietary habits with those of other European countries.

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**Table 1:** Changes over time (1990 to 2005) in overall mean daily household availability of main food and beverages groups in Portugal (quantity/person/day)

| Main food and beverages groups     | 1990 | 1995 | 2000 | 2005 | Difference (%) <sup>a</sup> |
|------------------------------------|------|------|------|------|-----------------------------|
| Cereals (g)                        | 292  | 258  | 239  | 210  | -28                         |
| Potatoes (g)                       | 323  | 230  | 180  | 128  | -60                         |
| Pulses (g)                         | 14   | 11   | 9.21 | 5.72 | -60                         |
| Vegetables (g)                     | 151  | 149  | 137  | 142  | -6                          |
| Fruit (g)                          | 211  | 175  | 198  | 177  | -16                         |
| Nuts (g)                           | 2.33 | 2.41 | 3.01 | 2.79 | +22                         |
| Meat, meat products and dishes (g) | 143  | 163  | 160  | 145  | +1                          |
| Fish, seafood and dishes (g)       | 75   | 86   | 83   | 75   | 0                           |
| Eggs (pieces)                      | 0.28 | 0.23 | 0.18 | 0.17 | -40                         |
| Added lipids (g)                   | 63   | 56   | 51   | 41   | -35                         |
| Milk and milk products (g)         | 252  | 261  | 276  | 274  | +9                          |
| Sugar and sugar products (g)       | 43   | 34   | 30   | 24   | -44                         |
| Non-alcoholic beverages (ml)       | 97   | 137  | 171  | 245  | +154                        |
| Fruit and vegetable juices (ml)    | 2.2  | 1.55 | 11   | 17   | +673                        |
| Alcoholic beverages (ml)           | 190  | 139  | 125  | 88   | -54                         |

<sup>a</sup> Calculated as  $[(2005-1990)/1990]*100$

**Table 2:** Mean household availability of main food and beverages groups by locality of the dwelling in Portugal in 1990 and 2005 (quantity/person/day)

| Locality of the dwelling           | 1990 |      |      |                             | 2005 |      |      |                             |
|------------------------------------|------|------|------|-----------------------------|------|------|------|-----------------------------|
|                                    | R    | SU   | U    | Difference (%) <sup>a</sup> | R    | SU   | U    | Difference (%) <sup>a</sup> |
| Cereals (g)                        | 353  | 332  | 249  | -29                         | 248  | 239  | 197  | -21                         |
| Potatoes (g)                       | 389  | 378  | 272  | -30                         | 167  | 162  | 113  | -32                         |
| Pulses (g)                         | 26   | 16   | 8.92 | -66                         | 9.2  | 7.76 | 4.63 | -50                         |
| Vegetables (g)                     | 178  | 144  | 142  | -20                         | 160  | 151  | 136  | -15                         |
| Fruit (g)                          | 174  | 169  | 244  | +40                         | 147  | 158  | 187  | +27                         |
| Nuts (g)                           | 3.83 | 1.55 | 2.06 | -46                         | 3.75 | 2.58 | 2.67 | -29                         |
| Meat, meat products and dishes (g) | 132  | 147  | 146  | +11                         | 147  | 155  | 142  | -3                          |
| Fish, seafood and dishes(g)        | 65   | 72   | 80   | +23                         | 79   | 73   | 75   | -5                          |
| Eggs (pieces)                      | 0.31 | 0.24 | 0.29 | -6                          | 0.15 | 0.15 | 0.18 | +20                         |
| Added lipids (g)                   | 72   | 65   | 58   | -19                         | 48   | 45   | 40   | -17                         |
| Milk and milk products (g)         | 217  | 222  | 279  | +29                         | 245  | 251  | 285  | +16                         |
| Sugar and sugar products (g)       | 56   | 47   | 36   | -36                         | 29   | 27   | 23   | -21                         |
| Non-alcoholic beverages (ml)       | 82   | 81   | 110  | +34                         | 183  | 197  | 268  | +46                         |
| Fruit and vegetable juices (ml)    | 1.75 | 1.85 | 2.55 | +46                         | 10   | 12   | 20   | +100                        |
| Alcoholic beverages (ml)           | 206  | 243  | 160  | -22                         | 111  | 108  | 79   | -29                         |

Note: R-rural, SU-semi urban, Urban

<sup>a</sup> Calculated as  $(((\text{urban}-\text{rural})/\text{rural})*100]$

**Table 3:** Mean household availability of main food and beverages groups by educational level of the household head in Portugal in 1990 and 2005 (quantity/person/day)

| Education level of the household head | 1990 |      |      |                             | 2005 |      |      |                             |
|---------------------------------------|------|------|------|-----------------------------|------|------|------|-----------------------------|
|                                       | IE   | SE   | HE   | Difference (%) <sup>a</sup> | IE   | SE   | HE   | Difference (%) <sup>a</sup> |
| Cereals (g)                           | 310  | 207  | 188  | -39                         | 227  | 178  | 172  | -24                         |
| Potatoes (g)                          | 346  | 208  | 186  | -46                         | 149  | 85   | 82   | -45                         |
| Pulses (g)                            | 16   | 6.69 | 3.16 | -80                         | 6.8  | 3.73 | 2.91 | -57                         |
| Vegetables (g)                        | 152  | 145  | 144  | -5                          | 150  | 121  | 137  | -9                          |
| Fruit (g)                             | 202  | 252  | 258  | +28                         | 172  | 178  | 211  | +23                         |
| Nuts (g)                              | 2.4  | 1.65 | 3.01 | +25                         | 2.87 | 2.41 | 3.11 | +8                          |
| Meat, meat products and dishes (g)    | 141  | 152  | 146  | +4                          | 150  | 136  | 128  | -15                         |
| Fish, seafood and dishes (g)          | 74   | 79   | 78   | +5                          | 77   | 68   | 80   | +4                          |
| Eggs (pieces)                         | 0.28 | 0.32 | 0.32 | +14                         | 0.16 | 0.17 | 0.2  | +25                         |
| Added lipids (g)                      | 65   | 50   | 48   | -26                         | 45   | 32   | 36   | -20                         |
| Milk and milk products (g)            | 238  | 308  | 354  | +49                         | 262  | 284  | 340  | +30                         |
| Sugar and sugar products (g)          | 46   | 31   | 27   | -41                         | 25   | 21   | 23   | -8                          |
| Non-alcoholic beverages (ml)          | 90   | 122  | 155  | 72                          | 216  | 290  | 349  | +62                         |
| Fruit and vegetable juices (ml)       | 1.76 | 4.78 | 3.68 | +109                        | 14   | 22   | 27   | +93                         |
| Alcoholic beverages (ml)              | 200  | 155  | 95   | -53                         | 95   | 70   | 80   | -16                         |

Note: IE-Illiterate/elementary education, SE-Secondary education, HE-Higher education

<sup>a</sup> Calculated as  $(((\text{higher-illiterate})/\text{elementary})/\text{illiterate/elementary})*100]$

**Table 4:** Mean household availability of main food and beverages groups by occupational status of the household head in Portugal in 1990 and 2005 (quantity/person/day)

| Occupational status of the household head | 1990 |      |      |       |  | 2005* |      |       |
|-------------------------------------------|------|------|------|-------|--|-------|------|-------|
|                                           | W    | R    | U    | Other |  | W     | R    | Other |
| Cereals (g)                               | 262  | 342  | 250  | 309   |  | 194   | 249  | 240   |
| Potatoes (g)                              | 289  | 372  | 331  | 332   |  | 108   | 170  | 148   |
| Pulses (g)                                | 10   | 23   | 6.13 | 13    |  | 5.01  | 7.74 | 5.16  |
| Vegetables (g)                            | 141  | 182  | 125  | 146   |  | 125   | 186  | 147   |
| Fruit (g)                                 | 214  | 216  | 198  | 304   |  | 163   | 220  | 163   |
| Nuts (g)                                  | 1.89 | 3.63 | 2.34 | 1.84  |  | 2.85  | 2.97 | 2.19  |
| Meat, meat products and dishes (g)        | 148  | 138  | 116  | 122   |  | 139   | 159  | 150   |
| Fish, seafood and dishes (g)              | 74   | 83   | 62   | 69    |  | 66    | 102  | 68    |
| Eggs (pieces)                             | 0.29 | 0.29 | 0.20 | 0.30  |  | 0.16  | 0.18 | 0.16  |
| Added lipids (g)                          | 56   | 80   | 46   | 57    |  | 36    | 52   | 50    |
| Milk and milk products (g)                | 264  | 250  | 239  | 249   |  | 267   | 306  | 257   |
| Sugar and sugar products (g)              | 36   | 59   | 27   | 53    |  | 21    | 32   | 28    |
| Non-alcoholic beverages (ml)              | 96   | 117  | 55   | 114   |  | 248   | 252  | 206   |
| Fruit and vegetable juices (ml)           | 2.49 | 2.00 | 2.52 | 1.94  |  | 19    | 14   | 14    |
| Alcoholic beverages (ml)                  | 171  | 216  | 118  | 152   |  | 79    | 108  | 74    |

\*Results for households with “Unemployed” household heads are not presented because they only cover the 4.6% of the total sample. Note: W-Workers (Manual and Non-manual), R-Retired, U-Unemployed

**Table 5:** Mean household availability of main food and beverages groups by household composition in Portugal in 1990 (quantity/person/day)

| <b>Household composition</b>       | <b>1 A</b> | <b>2 A</b> | <b>SA+C</b> | <b>TA+C</b> | <b>1A+E</b> | <b>A+E+C</b> | <b>1 E</b> | <b>2 E</b> | <b>Other</b> |
|------------------------------------|------------|------------|-------------|-------------|-------------|--------------|------------|------------|--------------|
| Cereals (g)                        | 403        | 375        | 265         | 260         | 354         | 264          | 371        | 344        | 303          |
| Potatoes (g)                       | 346        | 406        | 263         | 285         | 407         | 352          | 364        | 353        | 338          |
| Pulses (g)                         | 15         | 20         | 4.81        | 13          | 18          | 9.51         | 14         | 25         | 14           |
| Vegetables (g)                     | 274        | 237        | 113         | 122         | 194         | 130          | 183        | 206        | 158          |
| Fruit (g)                          | 337        | 274        | 206         | 193         | 267         | 160          | 245        | 225        | 205          |
| Nuts (g)                           | 4.76       | 2.72       | 2.16        | 1.64        | 4.85        | 1.32         | 6.34       | 2.31       | 2.78         |
| Meat, meat products and dishes (g) | 179        | 201        | 123         | 132         | 154         | 127          | 113        | 136        | 160          |
| Fish, seafood and dishes (g)       | 108        | 113        | 60          | 63          | 87          | 61           | 90         | 88         | 86           |
| Eggs (pieces)                      | 0.43       | 0.39       | 0.33        | 0.26        | 0.31        | 0.26         | 0.27       | 0.28       | 0.29         |
| Added lipids (g)                   | 121        | 95         | 55          | 51          | 79          | 52           | 88         | 82         | 67           |
| Milk and milk products (g)         | 374        | 280        | 289         | 248         | 253         | 221          | 294        | 241        | 238          |
| Sugar and sugar products (g)       | 84         | 58         | 45          | 34          | 57          | 39           | 86         | 65         | 43           |
| Non-alcoholic beverages (ml)       | 204        | 137        | 73          | 77          | 118         | 84           | 194        | 124        | 109          |
| Fruit and vegetable juices (ml)    | 2.84       | 3.21       | 1.70        | 2.40        | 1.30        | 1.02         | 5.01       | 0.85       | 2.15         |
| Alcoholic beverages (ml)           | 178        | 271        | 83          | 174         | 220         | 160          | 211        | 234        | 198          |

Note: A-Adults, E-Elderly, C-Children, OA-One Adult, TA-Two Adults

**Table 6:** Mean household availability of main food and beverages groups by household composition in Portugal in 2005 (quantity/person/day)

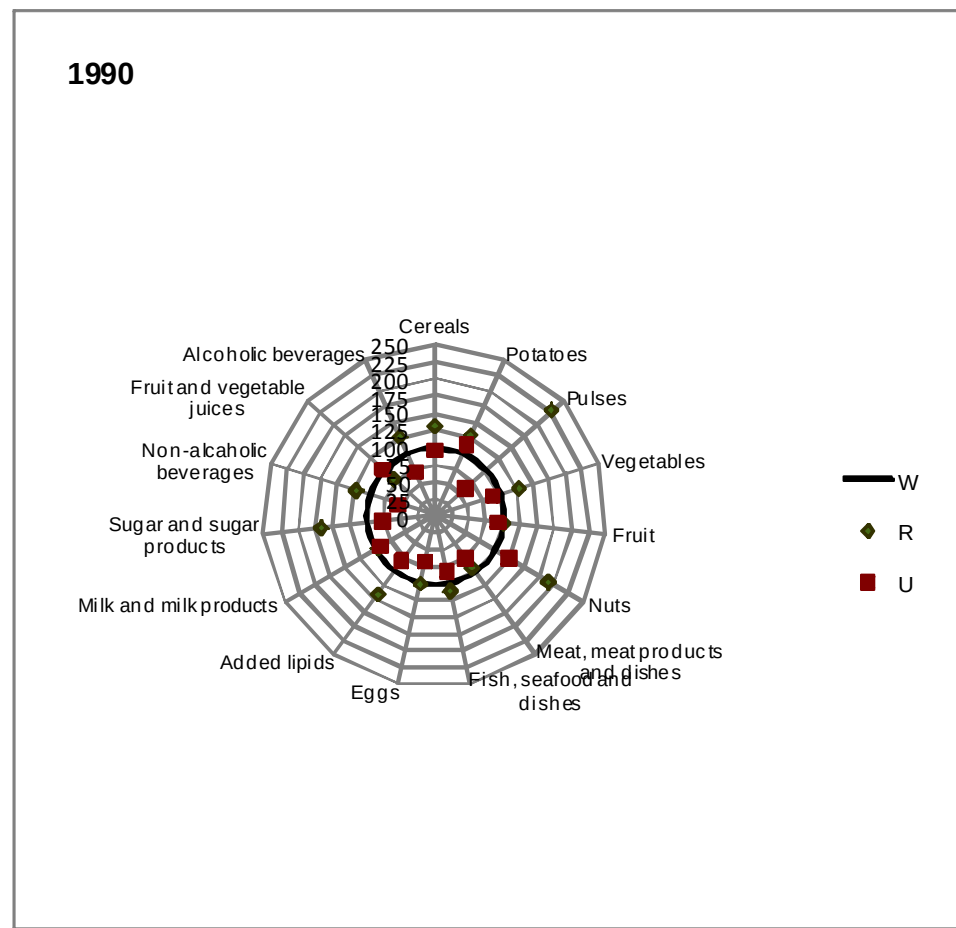
| Household composition              | 1 A  | 2 A  | OA+C | TA+C | 1A+E | A+E+C | 1 E  | 2 E  | Other |
|------------------------------------|------|------|------|------|------|-------|------|------|-------|
| Cereals (g)                        | 261  | 250  | 160  | 177  | 246  | 191   | 274  | 268  | 214   |
| Potatoes (g)                       | 120  | 132  | 78   | 101  | 167  | 133   | 167  | 186  | 137   |
| Pulses (g)                         | 6.21 | 6.09 | 1.99 | 3.96 | 8.51 | 5.97  | 8.33 | 9.13 | 6.31  |
| Vegetables (g)                     | 183  | 192  | 92   | 105  | 187  | 124   | 202  | 203  | 143   |
| Fruit (g)                          | 259  | 243  | 152  | 134  | 209  | 132   | 266  | 231  | 189   |
| Nuts (g)                           | 2.74 | 3.72 | 0.75 | 2.27 | 3.67 | 2.34  | 2.01 | 4.39 | 2.85  |
| Meat, meat products and dishes (g) | 170  | 188  | 123  | 127  | 159  | 128   | 133  | 156  | 157   |
| Fish, seafood and dishes (g)       | 79   | 98   | 52   | 54   | 101  | 61    | 95   | 113  | 83    |
| Eggs (pieces)                      | 0.22 | 0.23 | 0.19 | 0.15 | 0.18 | 0.14  | 0.19 | 0.18 | 0.17  |
| Added lipids (g)                   | 47   | 51   | 29   | 32   | 52   | 34    | 54   | 55   | 47    |
| Milk and milk products (g)         | 384  | 331  | 273  | 255  | 281  | 214   | 370  | 315  | 255   |
| Sugar and sugar products (g)       | 32   | 29   | 19   | 18   | 29   | 25    | 40   | 38   | 23    |
| Non-alcoholic beverages (ml)       | 357  | 329  | 254  | 215  | 252  | 168   | 267  | 267  | 266   |
| Fruit and vegetable juices (ml)    | 34   | 22   | 24   | 19   | 14   | 12    | 12   | 11   | 16    |
| Alcoholic beverages (ml)           | 133  | 120  | 23   | 67   | 108  | 77    | 76   | 134  | 94    |

Note: A-Adults, E-Elderly, C-Children, OA-One Adult, TA-Two Adults

**Table 7:** Mean household availability of main food and beverages groups in European countries in 2004/2005 (quantity/person/day)

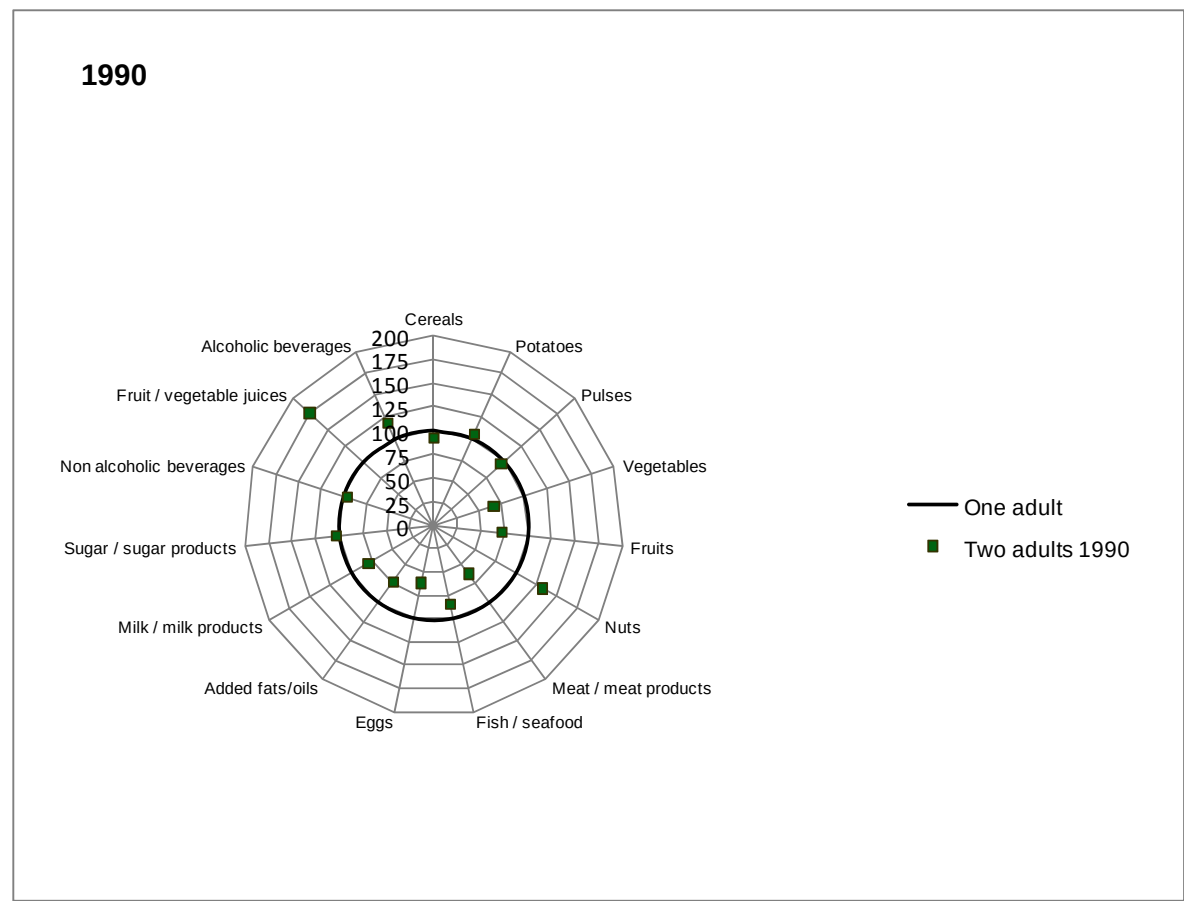
| <b>Main food and beverages groups</b> | <b>Croatia<br/>2004</b> | <b>Greece<br/>2004</b> | <b>Latvia<br/>2004</b> | <b>Montenegro<br/>2004</b> | <b>Serbia<br/>2004</b> | <b>Portugal<br/>2005</b> |
|---------------------------------------|-------------------------|------------------------|------------------------|----------------------------|------------------------|--------------------------|
| Cereals (g)                           | 342                     | 246                    | 262                    | 497                        | 394                    | 210                      |
| Potatoes (g)                          | 128                     | 124                    | 274                    | 211                        | 96                     | 128                      |
| Pulses (g)                            | 8.30                    | 14                     | 4.39                   | 13                         | 16                     | 5.72                     |
| Vegetables (g)                        | 173                     | 283                    | 216                    | 179                        | 211                    | 142                      |
| Fruit (g)                             | 142                     | 264                    | 120                    | 203                        | 108                    | 177                      |
| Nuts (g)                              | 3.53                    | 4.44                   | 2.10                   | 6.50                       | 1.98                   | 2.79                     |
| Meat, meat products and dishes (g)    | 181                     | 159                    | 185                    | 152                        | 147                    | 145                      |
| Fish, seafood and dishes (g)          | 23                      | 46                     | 38                     | 22                         | 16                     | 75                       |
| Eggs (pieces)                         | 0.45                    | 0.22                   | 0.55                   | 0.5                        | 0.6                    | 0.17                     |
| Added lipids (g)                      | 45                      | 77                     | 43                     | 50                         | 39                     | 41                       |
| Milk and milk products (g)            | 306                     | 296                    | 292                    | 454                        | 273                    | 274                      |
| Sugar and sugar products (g)          | 46                      | 34                     | 72                     | 63                         | 48                     | 24                       |
| Non alcoholic beverages (ml)          | 603                     | 244                    | 394                    | 944                        | 404                    | 245                      |
| Fruit and vegetable juices (ml)       | 40                      | 37                     | 25                     | 23                         | 45                     | 17                       |
| Alcoholic beverages (ml)              | 93                      | 60                     | 51                     | 86                         | 56                     | 88                       |

**Figure 1:** Deviation (%) of the daily individual food and beverages household availability of the “Retired” or “Unemployed” from that of “Workers” in Portugal 1990. The reference circle indicated in the figure corresponds to the mean availability among workers.



Note: W-Workers, R-Retired, U- Unemployed

**Figure 2:** Deviation (%) of the daily individual food and beverages household availability of the “Retired” from that of “Workers” in Portugal 2005. The reference circle indicated in the figure corresponds to the mean availability among workers.



Note: W-Workers, R-Retired

**Figure 3:** Deviation (%) of the daily individual food and beverages household availability of One Elderly households from the One Adult households in Portugal 1990 and 2005. The reference circle indicated in the figure corresponds to the One Adult households mean, either from 1990 or 2005.

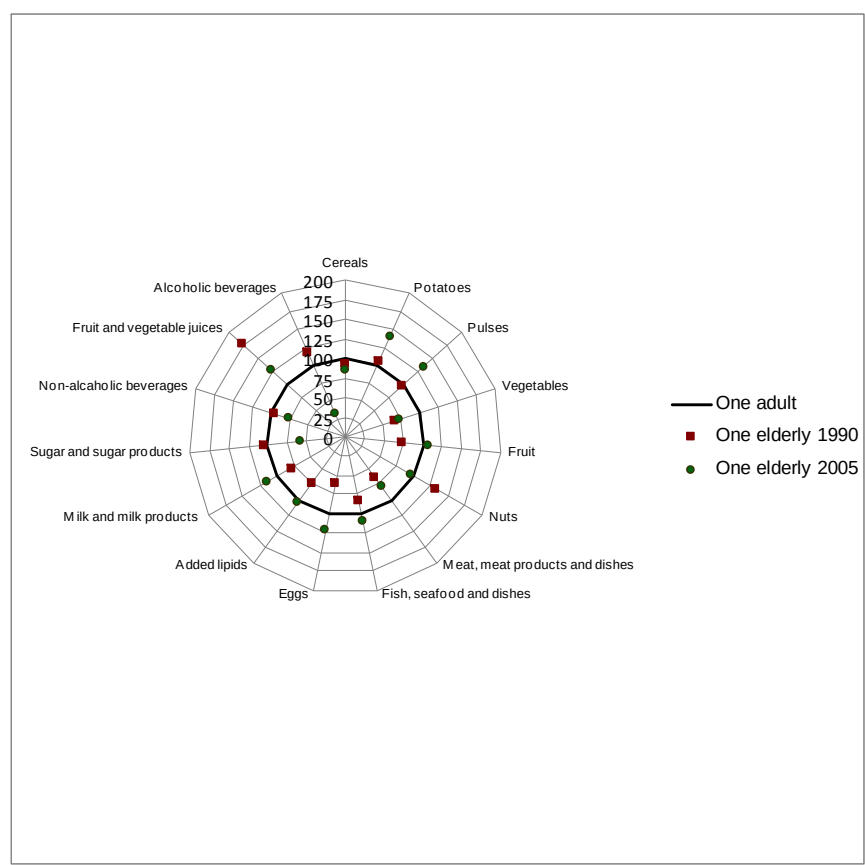


**Figure 4:** Deviation (%) of the daily individual food and beverages household availability of Two Elderly households from the Two Adult households in Portugal 1990 and 2005. The reference circle indicated in the figure corresponds to the Two Adult households mean, either from 1990 or 2005.

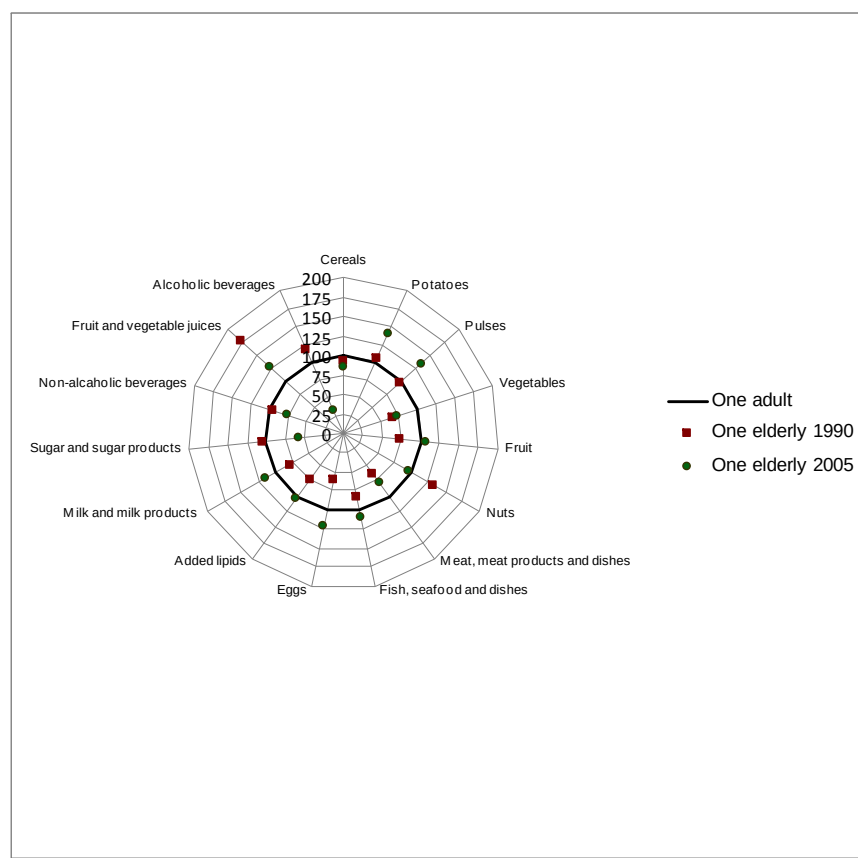


**Figure 5:** Deviation (%) between the daily individual food and beverages household availability of other European countries and the Portuguese means in 2005. The reference circle indicated in the figure corresponds to Portugal's 2005 mean.

