

# ANSES-CIQUAL food composition table

## 2017

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### XML format

## 1 The 2017 ANSES-CIQUAL food composition table

### 1.1 Context and general presentation

The French food composition database is run by CIQUAL in the Observatory of Food, unit of ANSES (the French agency for food, environmental and occupational health safety). Its mission is to collect, evaluate and make available nutritional composition data on foods consumed in France.

This file provides the composition of about 2800 foods for 61 components (for instance: carbohydrates, proteins, fat and fatty acids, vitamins and minerals, energy...).

### 1.2 Documentation

#### 1.2.1 Characteristics of food composition data

All values are given as per 100 g edible part of the food, i.e. meat without bone, apple without core, etc.

#### Missing values

When the content of a food for a component is not known, a hyphen stands in place of the number. It is important for users to take into account these missing values and not to consider them as zero.

#### Trace

In some cases, a component is detected in the food matrix, but it cannot be quantified precisely. The analytical result can therefore be considered as "trace".

The term "trace" is also used, in the absence of analysis, when a compiler estimates that the content of a food is very low but cannot be considered as zero. The average content is then published as "trace".

#### 1.2.2 Remarks about some components

##### Fat and fatty acids

In most foods, fat is mainly composed of triacylglycerol molecules, made from a glycerol core, esterified by 3 fatty acids.

Depending on the food group and the type of fat in the food, fatty acids represent 56 to 95% of total fat, the remaining fraction containing glycerol, molecules that cannot be saponified (sterol compounds, fat-soluble vitamins), and sometimes phosphate groups etc.

## Carbohydrates

The regulatory definition of carbohydrates is "any carbohydrate which is metabolised by humans, and includes polyols" (Regulation EU N° 1169/2011 on the provision of food information to consumers).

Therefore, in the ANSES-CIQUAL food composition table, dietary fibers are not included in the carbohydrates.

## Proteins and crude proteins

In the ANSES-CIQUAL food composition table, values for "Protein" are obtained by multiplying total nitrogen by a specific conversion factor (Jones factors) depending on the food group (e.g. 6.38 for dairy products, 5.95 for rice). This approach, despite its imperfections stated in Afssa report "Apport en protéines : consommation, qualité, besoins et recommandations" (2003), takes into account the variability of the nitrogen/protein ratio among food groups.

For nutritional labelling in Europe, "Protein, crudes, N x 6,25" values are calculated by multiplying total nitrogen by 6.25 for all foods (Regulation EU No 1169/2011 on the provision of food information to consumers).

## Energy

There are several methods to calculate energy content of foods.

The values in the present table have been calculated for each foods using the following factors:

- 37 kJ/g (9 kcal/g) for fat
- 29 kJ/g (7 kcal/g) for alcohol
- 17 kJ/g (4 kcal/g) for protein
- 17 kJ/g (4 kcal/g) for carbohydrates (except for polyols)
- 13 kJ/g (3 kcal/g) for organic acids
- 10 kJ/g (2.4 kcal/g) for polyols
- 8 kJ/g (2 kcal/g) for dietary fibers.

"Energy, Regulation EU No 1169/2011" has been calculated according to the Regulation UE No 1169/2011, which uses "Protein, crude, N x 6,25", obtained by multiplying total nitrogen by 6.25 for all foods.

"Energy, N x Jones' factor, with fibres" has been calculated using values for "Protein", obtained by multiplying total nitrogen by a specific conversion factor (Jones factors) depending on the food group (e.g. 6.38 for dairy products).

## Vitamin A

Several components show a vitamin A activity: retinol but also some carotenes and carotenoids.

Different formulas have been proposed to calculate vitamin A activity:

- Vitamin A activity (expressed in  $\mu\text{g}$  retinol equivalent) = retinol (in  $\mu\text{g}$ ) + 1/6 beta-carotene (in  $\mu\text{g}$ ) + 1/12 other carotenoids pro-vitamin A (in  $\mu\text{g}$ ) (Requirements of vitamin A, thiamine, riboflavine and niacin, Report of a Joint FAO/WHO Expert Group, 1967)
- More recently, vitamin A activity (expressed in  $\mu\text{g}$  retinol equivalent) = retinol (in  $\mu\text{g}$ ) + 1/12 beta-carotene (in  $\mu\text{g}$ ) + 1/24 alpha-carotene and beta-cryptoxanthin (in  $\mu\text{g}$ ) (Dietary Reference Intakes for Vitamin A, Institute of Medicine (US) Panel in Micronutrients, 2001).

However, in 2001, the FAO concluded that the old conversion factor for beta-carotene to determine vitamin A activity, estimated at 1/6, is apparently overestimated but that scientific data still lack to update it (Human Vitamin and Mineral Requirements, Report of a joint FAO/WHO expert consultation, 2001).

Thereby, the ANSES-CIQUAL food composition table provides separate values for retinol and beta-carotene (data for other carotenoids are not available).

## 2 Description of the XML files

### 2.1 Content

The XML files provide the composition of foods included in the 2017 ANSES-CIQUAL table. It contains 2807 foods and 61 components. It also supplies the data sources which were used to produce published values.

### 2.2 List of the XML files

The table 1 lists the files which are described below.

**Table 1 – List of XML files**

File	Content
alim_2017 11 21.xml	list of foods
alim_grp_2017 11 21.xml	list of food groups
compo_2017 11 21.xml	food composition data
const_2017 11 21.xml	list of components
sources_2017 11 21.xml	data sources

#### 2.2.1 File alim\_2017 11 21.xml (list of foods)

The foods of the version 2017 of the ANSES-CIQUAL food composition table are listed in the file **alim\_2017 11 21.xml**.

Each food is identified by its code (alim\_code) and has a name in French (alim\_nom\_fr) and in English (alim\_nom\_eng). The group, subgroup and sub-subgroup codes refer to the file **alim\_grp\_2017 11 21.xml** which is described further.

**Table 2 – content of the file alim\_2017 11 21.xml**

Label	Content	Type
alim_code	code of the food	number
alim_nom_fr	name of the food in French	text
alim_nom_eng	name of the food in English	text
alim_grp_code	code of the food group	number
alim_ssgpr_code	code of the food subgroup	number
alim_ssssgrp_code	code of the food sub-subgroup	number

### Extract of the file alim\_2017 11 21.xml :

```
<ALIM>
  <alim_code> 2008 </alim_code>
  <alim_nom_fr> Cocktail sans alcool (à base de jus de fruits et de sirop)
</alim_nom_fr>
  <alim_nom_index_fr> Virgin mojito, virgin pina colada </alim_nom_index_fr>
  <alim_nom_eng> Cocktail, alcohol-free (juices and syrup-based cocktail)
</alim_nom_eng>
  <alim_nom_index_eng> Cocktail, alcohol-free (juices and syrup-based
cocktail) </alim_nom_index_eng>
  <alim_grp_code> 06 </alim_grp_code>
  <alim_ssggrp_code> 0603 </alim_ssggrp_code>
  <alim_ssssggrp_code> 060304 </alim_ssssggrp_code>
</ALIM>
<ALIM>
  <alim_code> 2011 </alim_code>
  <alim_nom_fr> Jus multifruit - base orange, multivitaminé </alim_nom_fr>
  <alim_nom_index_fr> Jus multifruit </alim_nom_index_fr>
  <alim_nom_eng> Mixed fruits juice, orange based, multivitamin
</alim_nom_eng>
  <alim_nom_index_eng> Mixed fruits juice, orange based, multivitamin
</alim_nom_index_eng>
  <alim_grp_code> 06 </alim_grp_code>
  <alim_ssggrp_code> 0602 </alim_ssggrp_code>
  <alim_ssssggrp_code> 060201 </alim_ssssggrp_code>
</ALIM>
```

### 2.2.2 File alim\_grp\_2017 11 21.xml (list of food groups)

Foods have been arranged by ANSES-CIQUAL in groups, subgroups and sub-subgroups with common characteristics, which can be the source of the food, the consumption habits, the type of consumers... This classification is a choice of ANSES-CIQUAL but other types of classification exist.

The food groups, subgroups and sub-subgroups used in the 2017 version of ANSES-CIQUAL food composition table are listed in the file **alim\_grp\_2017 11 21.xml**.

**Table 3 – content of the file alim\_grp\_2017 11 21.xml**

Label	Content	Type
<b>alim_grp_code</b>	code of the food group	number
<b>alim_ssggrp_code</b>	code of the food subgroup	number
<b>alim_ssssggrp_code</b>	code of the food sub-subgroup	number
<b>alim_grp_nom_fr</b>	name of the food group in French	text
<b>alim_grp_nom_eng</b>	name of the food group in English	text
<b>alim_ssggrp_nom_fr</b>	name of the food subgroup in French	text
<b>alim_ssggrp_nom_eng</b>	name of the food subgroup in English	text
<b>alim_ssssggrp_nom_fr</b>	name of the food sub-subgroup in French	text
<b>alim_ssssggrp_nom_eng</b>	name of the food sub-subgroup in English	text

### Extract of the file alim\_grp\_2017 11 21.xml:

```
<ALIM_GRP>
```

```

<alim_grp_code> 01 </alim_grp_code>
<alim_grp_nom_fr> entrées et plats composés </alim_grp_nom_fr>
<alim_grp_nom_eng> starters and dishes </alim_grp_nom_eng>
<alim_ssgrp_code> 0101 </alim_ssgrp_code>
<alim_ssgrp_nom_fr> salades composées et crudités </alim_ssgrp_nom_fr>
<alim_ssgrp_nom_eng> mixed salads </alim_ssgrp_nom_eng>
<alim_ssssgrp_code> 000000 </alim_ssssgrp_code>
<alim_ssssgrp_nom_fr> - </alim_ssssgrp_nom_fr>
<alim_ssssgrp_nom_eng> - </alim_ssssgrp_nom_eng>
</ALIM_GRP>
<ALIM_GRP>
  <alim_grp_code> 01 </alim_grp_code>
  <alim_grp_nom_fr> entrées et plats composés </alim_grp_nom_fr>
  <alim_grp_nom_eng> starters and dishes </alim_grp_nom_eng>
  <alim_ssgrp_code> 0102 </alim_ssgrp_code>
  <alim_ssgrp_nom_fr> soupes </alim_ssgrp_nom_fr>
  <alim_ssgrp_nom_eng> soup </alim_ssgrp_nom_eng>
  <alim_ssssgrp_code> 000000 </alim_ssssgrp_code>
  <alim_ssssgrp_nom_fr> - </alim_ssssgrp_nom_fr>
  <alim_ssssgrp_nom_eng> - </alim_ssssgrp_nom_eng>
</ALIM_GRP>

```

### 2.2.3 File compo\_2017 11 21.xml (food composition data)

The food composition data of 2017 version of ANSES-CIQUAL table is available in the file **compo\_2017 11 21.xml**. Whenever possible, a value is given for the pair [food, component] (the food and the component are described in the files **alim\_2017 11 21.xml** and **const\_2017 11 21.xml**).

**Table 4 - content of the file compo\_2017 11 21.xml**

Label	Content	Type
<b>alim_code</b>	code of the food	number
<b>const_code</b>	code of the component	number
<b>teneur</b>	value : it can be a value, a max value (example : "<10"), the indication "trace" or a hyphen if the value is missing	text
<b>min</b>	minimum value observed in the data-sources	text
<b>max</b>	maximum value observed in the data-sources	text
<b>code_confiance</b>	confidence code, which characterizes the quality of the average content value (A=very reliable to D=less reliable)	text
<b>source_code</b>	code of the data-sources	number

#### Extract of the file compo\_2017 11 21.xml:

```

<COMPO>
  <alim_code> 20918 </alim_code>
  <const_code> 333 </const_code>
  <teneur> - </teneur>
  <min missing=" " />
  <max missing=" " />
  <code_confiance missing=" " />
  <source_code missing="." />
</COMPO>
<COMPO>
  <alim_code> 20918 </alim_code>
  <const_code> 400 </const_code>

```

```

<teneur> 80,6 </teneur>
<min>      79,1 </min>
<max>      82 </max>
<code_confiance> A </code_confiance>
<source_code> 66896 </source_code>
</COMPO>

```

## 2.2.4 File const\_2017 11 21.xml (list of the components)

The components of the version 2017 of the ANSES-CIQUAL food composition table are listed in the table **const\_2017 11 21.xml**. A component has a name in French and in English.

**Table 5 – content of the file const\_2017 11 21.xml**

Label	Content	Type
<b>const_code</b>	code of the component	number
<b>const_nom_fr</b>	name of the component in French (includes unit)	text
<b>const_nom_eng</b>	name of the component in English (includes unit)	text

### Extract of the file const\_2017 11 21.xml:

```

<CONST>
  <const_code> 328 </const_code>
  <const_nom_fr>  Energie,  Règlement  UE  N°  1169/2011  (kcal/100g)
</const_nom_fr>
  <const_nom_eng>  Energy,  Regulation  EU  No  1169/2011  (kcal/100g)
</const_nom_eng>
</CONST>
<CONST>
  <const_code> 332 </const_code>
  <const_nom_fr>  Energie,  N x facteur Jones,  avec fibres  (kJ/100g)
</const_nom_fr>
  <const_nom_eng>  Energy,  N x Jones&apos; factor,  with fibres  (kJ/100g)
</const_nom_eng>
</CONST>

```

## 2.2.5 File sources\_2017 11 21.xml (data-sources)

The data-sources which were used to produce published data of the version 2017 of the ANSES-CIQUAL table are detailed in the file **sources\_2017 11 21.xml**.

**Table 6 – content of the file sources\_2017 11 21.xml**

Label	Content	Type
<b>source_code</b>	code of data-sources	number
<b>ref_citation</b>	name of data-sources	text

### Extract of the file sources\_2017 11 21.xml:

```

<SOURCES>
  <source_code> 73490 </source_code>
  <ref_citation> Extraction BDD Oqali au 07/02/2014 </ref_citation>

```

```
</SOURCES>
<SOURCES>
  <source_code> 73491 </source_code>
  <ref_citation> Analyses OQALI-INRA de biscuits sucrés, le partie (2009)
</ref_citation>
</SOURCES>
<SOURCES>
  <source_code> 73491 </source_code>
  <ref_citation> Données industrielles françaises (2014) </ref_citation>
</SOURCES>
```

**WARNING:**

*Some codes are used in the XML files. They represent identifiers and enable to manage relations between datasets. We highly recommend not to delete them, even if you don't need them for your personal use.*