ANSES-CIQUAL food composition table

2020

XML format

1 The 2020 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 3185 foods for 67 components (for instance: carbohydrates, starch and individual suagrs, proteins, fat and fatty acids, vitamins and minerals, energy…).

1.2 Documentation

1.2.1 Caracteristics 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 µg retinol equivalent) = retinol (in µg) + 1/6 beta-carotene (in µg) + 1/12 other carotenoids pro-vitamin A (in µg) (Requirements of vitamin A, thiamine, riboflavine and niacin, Report of a Joint FAO/WHO Expert Group, 1967)
- More recently, vitamin A activity (expressed in µg retinol equivalent) = retinol (in µg) + 1/12 beta-carotene (in µg) + 1/24 alpha-carotene and beta-cryptoxanthin (in µg) (Dietary Reference Intakes for Vitamin A, Institute of Medecine (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 2020 ANSES-CIQUAL table. It contains 3185 foods and 67 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_2020_07_07.xml	list of foods
alim_grp_2020_07_07.xml	list of food groups
compo_2020_07_07.xml	food composition data
const_2020_07_07.xml	list of components
sources_2020_07_07.xml	data sources

2.2.1 File alim_2020_07_07.xml (list of foods)

The foods of the version 2020 of the ANSES-CIQUAL food composition table are listed in the file **alim_2020_07_07.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_2020_07_07.xml** which is described further.

Table 2 – content of the file alim_2020_07_07.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_nom_sci	Scientific name of the food (for aquatic animal products only)	text
alim_grp_code	code of the food group	number

Label	Content	Type
alim_ssgrp_code	code of the food subgroup	number
alim_sssgrp_code	code of the food sub-subgroup	number

2.2.2 File alim_grp_2020_07_07.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 2020 version of ANSES-CIQUAL food composition table are listed in the file **alim_grp_2020_07_07.xml**.

Table 3 – content of the file alim_grp_2020_07_07.xml

Label	Content	Type
alim_grp_code	code of the food group	number
alim_ssgrp_code	code of the food subgroup	number
alim_sssgrp_code	code of the food sub-subgroup	number
alim_grp_nom_fr	name of the food group in French	text
alim_grp_nom_eng	name of the food group in English	text
alim_ssgrp_nom_fr	name of the food subgroup in French	text
alim_ssgrp_nom_eng	name of the food subgroup in English	text
alim_sssgrp_nom_fr	name of the food sub-subgroup in French	text
alim_sssgrp_nom_eng	name of the food sub-subgroup in English	text

2.2.3 File compo_2020_07_07.xml (food composition data)

The food composition data of 2020 version of ANSES-CIQUAL table is available in the file **compo_2020_07_07.xml**. Whenever possible, a value is given for the pair [food, component] (the food and the component are described in the files **alim_2020_07_07.xml** and **const_2020_07_07xml**).

Table 4 - content of the file compo_2020_07_07.xml

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

2.2.4 File const_2020_07_07.xml (list of the components)

The components of the version 2020 of the ANSES-CIQUAL food composition table are listed in the table **const_2020_07_07.xml**. A component has a name in French and in English.

Table 5 – content of the file const_2020_07_07.xml

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

2.2.5 File sources_2020_07_07.xml (data-sources)

The data-sources which were used to produce published data of the version 2020 of the ANSES-CIQUAL table are detailed in the file **sources_2020_07_07.xml.**

Table 6 – content of the file sources_2020_07_07.xml

Label	Content	Type
source_code	code of data-sources	number
ref_citation	name of data-sources	text

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.