

ANSES-CIQUAL food composition table

2017

Access 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 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 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 Access database

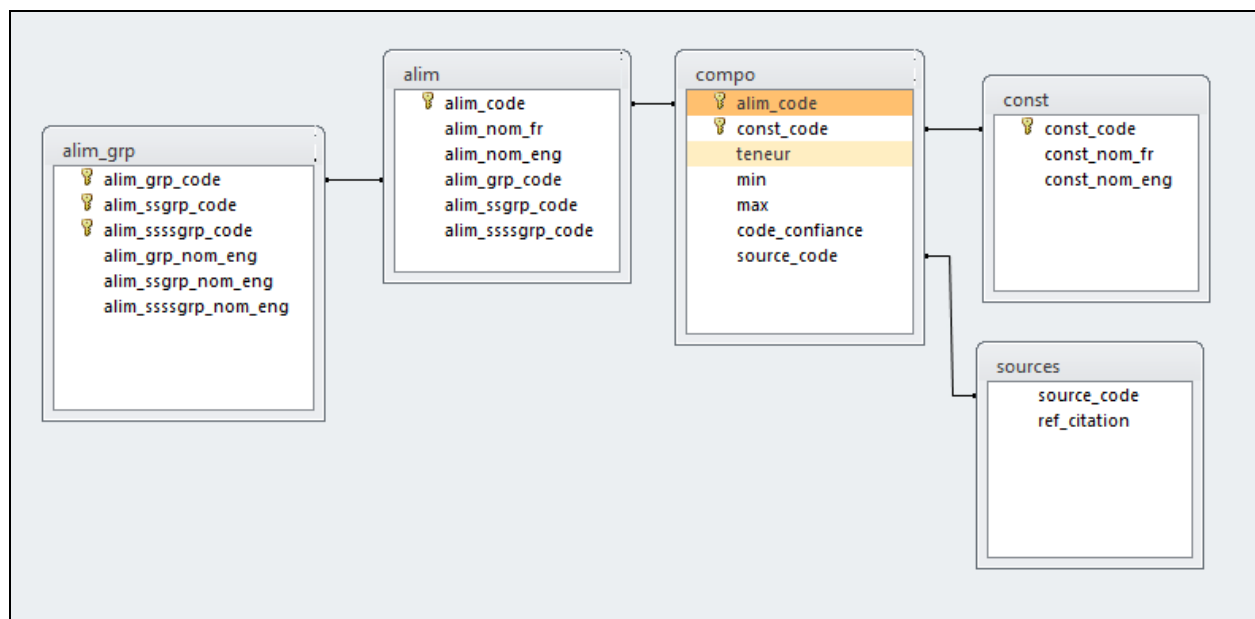
2.1 Content

The database **Table Ciqua1 2017_2017 11 17.accdb** provides 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 Relational schema of the Access database

The figure 1 illustrates the relational schema of the Access database.

Figure 1 – relational schema of the database



2.3 List of the Access tables

The table 1 lists the tables which are described below.

Table 1 – List of Access tables

Label of the tables	Content
alim	list of foods
alim_grp	list of food groups
compo	food composition data
const	list of components
sources	data sources

2.3.1 Table alim (list of foods)

The foods of the version 2017 of the ANSES-CIQUAL food composition table are listed in the table **alim** of the Access database.

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 table **alim_grp** which is described further.

Table 2 – list of the fields of the table alim

Label of the fields	Content	Type	Example
alim_code	code of the food	number	2012
alim_nom_fr	name of the food in French	text	<i>Jus d'orange, à base de concentré</i>
alim_nom_eng	name of the food in English	text	<i>Orange juice, reconstituted from a concentrate</i>
alim_grp_code	code of the food group	number	06
alim_ssgrp_code	code of the food subgroup	number	0602
alim_sssgrp_code	code of the food sub-subgroup	number	060201

2.3.2 Table alim_grp (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 table **alim_grp**.

Table 3 – list of the fields of the table alim_grp

Label of the fields	Content	Type	Example
alim_grp_code	code of the food group	number	06
alim_ssgrp_code	code of the food subgroup	number	0602
alim_sssgrp_code	code of the food sub-subgroup	number	060201
alim_grp_nom_fr	name of the food group in French	text	<i>boissons</i>
alim_grp_nom_eng	name of the food group in English	text	<i>beverages</i>

Label of the fields	Content	Type	Example
alim_ssgrp_nom_fr	name of the food subgroup in French	text	<i>boissons sans alcool</i>
alim_ssgrp_nom_eng	name of the food subgroup in English	text	<i>non-alcoholic beverages</i>
alim_ssssgroup_nom_fr	name of the food sub-subgroup in French	text	<i>jus</i>
alim_ssssgroup_nom_eng	name of the food sub-subgroup in English	text	<i>juices</i>

2.3.3 Table compo (food composition data)

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

Table 4 - list of the fields of the table compo

Label of the fields	Content	Type	Example
alim_code	code of the food	number	2012
const_code	code of the component	number	55100
teneur	value : it can be a value, a max value (example : "<10"), the indication "trace" or a hyphen if the value is missing	text	44,2
min	minimum value observed in the data-sources	text	18
max	maximum value observed in the data-sources	text	60
code_confiance	confidence code, which characterizes the quality of the average content value (A=very reliable to D=less reliable)	text	A
source_code	code of the data-sources	number	1418

2.3.4 Table const (list of the components)

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

Table 5 – list of the fields of the table const

Label of the fields	Content	Type	Example
const_code	code of the component	number	55100
const_nom_fr	name of the component in French (includes unit)	text	<i>Vitamine C (mg/100g)</i>
const_nom_eng	name of the component in English (includes unit)	text	<i>Vitamin C (mg/100g)</i>

2.3.5 Table sources (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 table **sources**.

Table 6 – list of the fields of the table sources

Label of the fields	Content	Type	Example
source_code	code of data-sources	number	1418
ref_citation	name of data-sources	text	<p>(2008) Étiquetage jus de fruits Analyses CIQUAL (2010-1a) Données Unijus-Qualijus 2017 Données industrielles françaises (2014) Extraction BDD Oqali au 07/02/2014</p> <p>Saxholt E, Christensen AT, Møller A, Hartkopp HB, Hess Ygil K, Hels OH (2009). Danish Food Composition Databank, revision 7.01. Department of Nutrition, National Food Institute, Technical University of Denmark, version 7.1, 2009.</p> <p>U.S. Department of Agriculture, Agricultural Research Service (2014). USDA National Nutrient Database for Standard Reference, Release 27. Nutrient Data Laboratory Home Page, http://www.ars.usda.gov/ba/bhnrc/ndl</p>

WARNING:

Some codes are used in the Access tables. 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.