

When open **FOOD** facts helps science

Find out why and how numerous research teams around the world are reusing the Open Food Facts database.

Webinar – 6th of May 2025



AGENDA

ABOUT OPEN FOOD FACTS

OUR DATA AND ITS USE IN RESEARCH

THE “OFF FOR SCIENCE” PROGRAM

Q&A

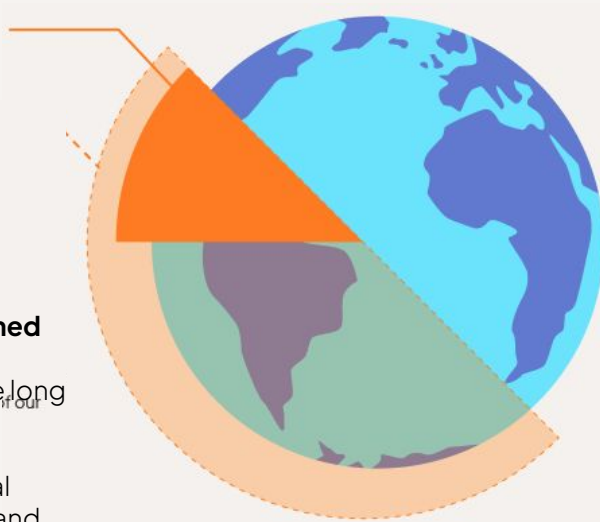
ABOUT OPEN FOOD FACTS

Food is a priority for both Health and the Environment

Worldwide, over **1 billion people** are considered obese, and in the EU, 1 in 3 children, [according to the WHO](#).

And the bad news is it's on the rise: according to the [World Obesity Foundation](#) by 2035 over 4 billion people - **more than ½ of the world's population** - will be obese.

Many consumers find themselves **overwhelmed** by the amount of information found on food packaging, sometimes struggling to read the long list of ingredients in small font, decipher mysterious food additives or differentiate between food labels... However, there is a real desire to make better choices for our health and that of our planet, especially when food.



Food accounts for...

1/3

of greenhouse gas emissions Source: i4CE - 2019

70%

of drinking water consumption Source: OECD

The majority

of global packaging waste Source: Article by Nemat et al



Who are we?

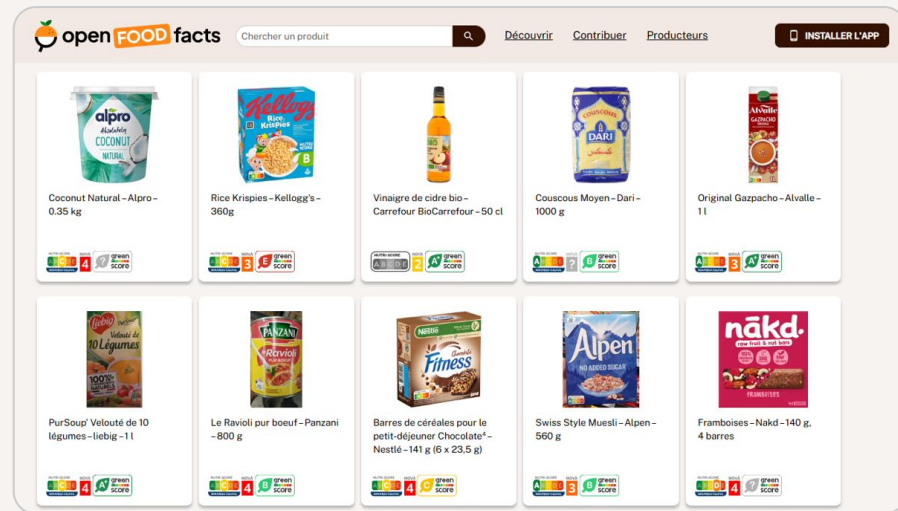
Pioneers of food transparency since **2012**, Open Food Facts is a **community** building a collaborative, open **database of food products**.

We gather data about **nutritional** and **environmental** impact of food products.

♥ Non-profit, independent from the food industry, recognized as a [United Nations Digital Public Good](#)

👥 **Community-driven**: contributors, scientists, mobile apps, food manufacturers and institutions

🔍 **Open source** and **open data**



Our mission

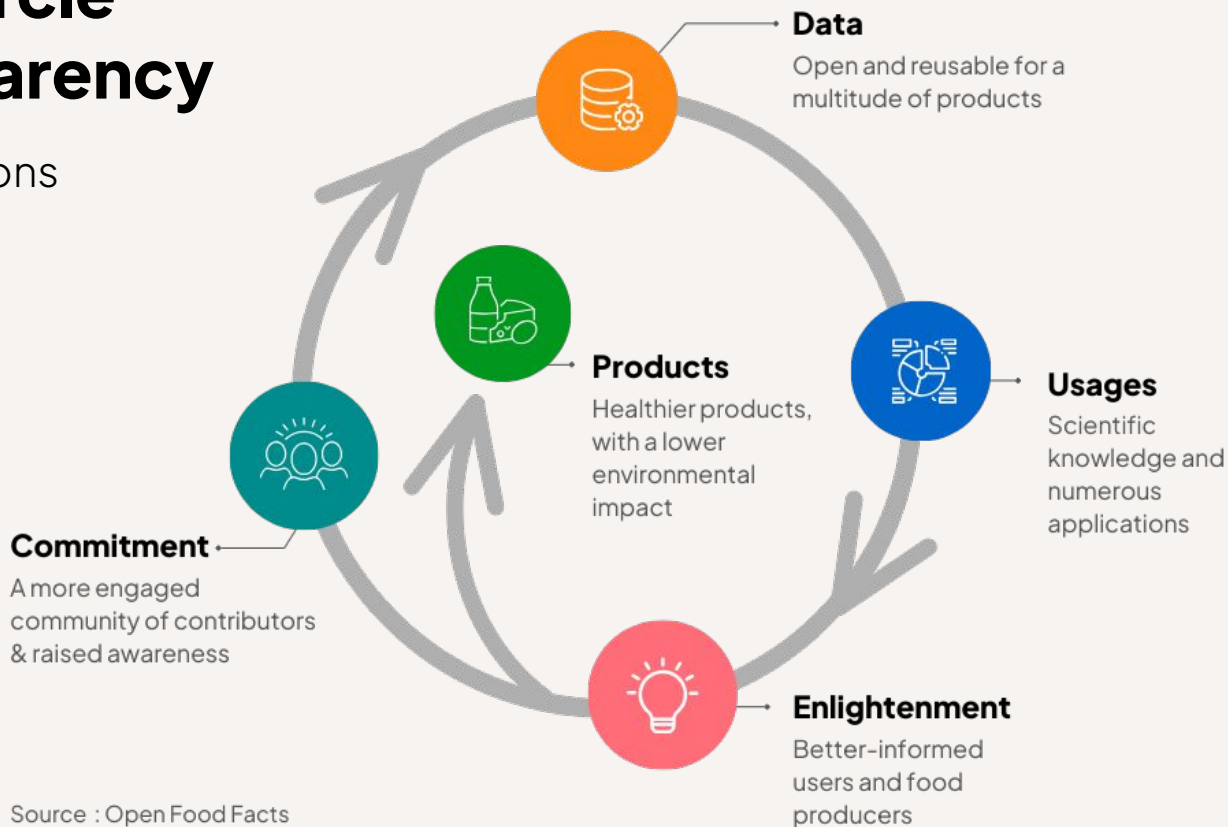
We seek to **empower people** through data:
allowing consumers, producers, researchers, governments...

... **To measure and change** at large scale **the impact**
of food on our health and on the planet.



The virtuous circle of food transparency

The why behind our actions



Source : Open Food Facts

Our impact in a few figures



3.8 M

products from all
over the world

40+

languages available

80k+

contributors in the
world

350+

committed producers
sharing product information

600+

scientific papers citing
Open Food Facts

3.5 M

unique visitors
monthly

OUR DATA AND ITS USE IN RESEARCH

What kind of data are we talking about?

Raw data: anything you can see on a packaged food!



ton. Luontaisesti laktoositon. • INGREDIENTES: agua, leche de coco [27%] (crema de coco, agua), agua de coco [27%], piña [7%], azúcar, almidón modificado, correctores de acidez (ácido cítrico, citratos de sodio), estabilizante (pectinas), aroma natural, extracto de zanahorias, citrato tricalcico, fermentos (S. thermophilus, L. bulgaricus). Puede contener trazas de soja. Sin lácteos y sin gluten. Naturalmente sin lactosa. • INGREDIENTES: água, leite de coco [27%] (creme de

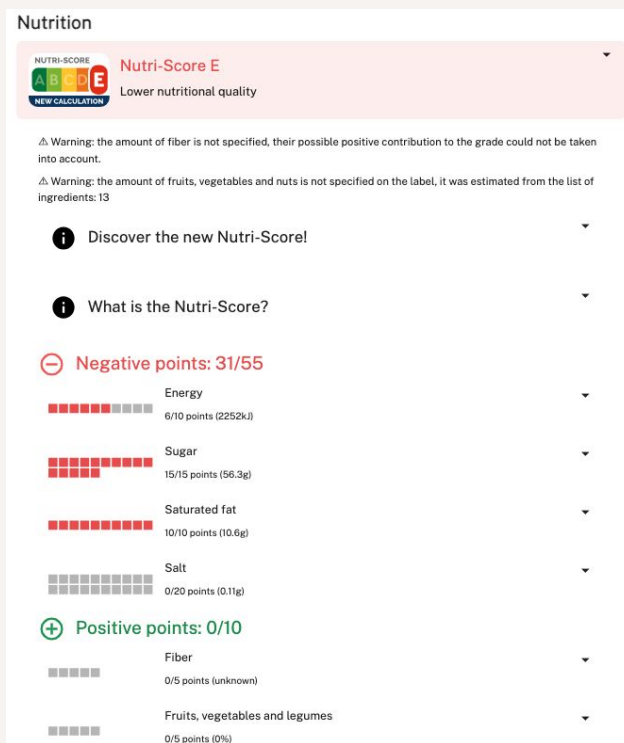


- Barcodes (EAN-13, EAN-8, UPC, ...)
- Product name
- Quantity
- Category
- Weight
- Brand
- Labels & certifications
- Countries and shops where sold
- **NEW** Prices!
- Nutritional values
- Ingredient lists
- Serving size
- Packaging information
- Origin of ingredients
- ... Totalising 150+ other raw data fields



What kind of data are we talking about?

... And also calculated information!

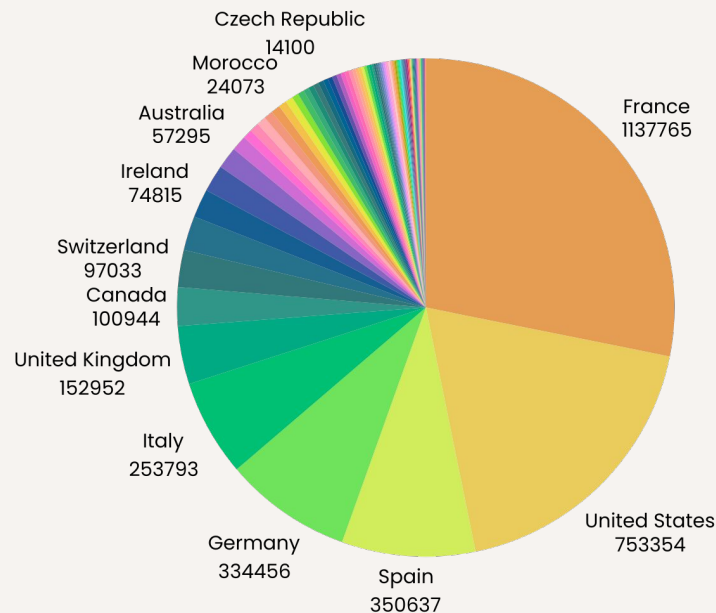
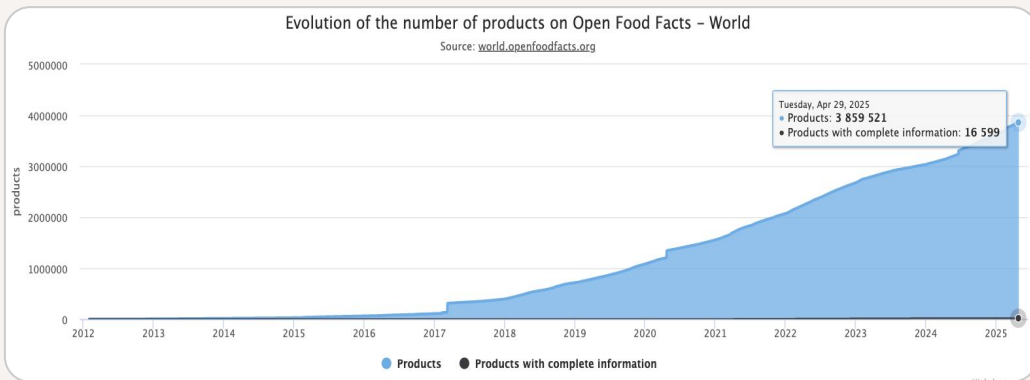


- **Nutri-Score**: nutritional quality (officially adopted in 7 countries)
- **Green-Score**: environmental impact of food
- **NOVA** group: ultra-processing level of food
- Ingredient list analysis :
 - Extraction of the additives
 - Vegetarian
 - Palm oil
- Estimation of % of ingredients
- Risks of overexposure to certain additives from EFSA reports
- Educational messages in context
- Normalization of several fields (to be compared), while keeping raw data
- Completeness



How much data are we talking about?

- 3,819,724 products
- ± 1500 new products **every day**
- **Scores:**
 - 1,3 M products with a Nutri-Score
 - 925,000 products with a Green-Score
 - 981,000 products with a NOVA
- <https://world.openfoodfacts.org/data>



Number of products per country

... and 8+ million photos to feed the AI ([article](#))

Open Food Facts Images on AWS Open Dataset: The Ultimate Food Image Dataset

Open Food Facts Images on AWS Open Dataset: The Ultimate Food Image Dataset



Advancing science through open data

Influence of Open Food Facts in the study	# of studies
Essential	17
An important source	21
One of the sources	13
A minor source or usage	9
Just mentioned	5
Mentioned but its usage is still unknown (not analyzed or article behind a paywall)	400+



Dréano-Trécant, L., Egnell, M., Hercberg, S., Galan, P., Soudon, J., Fialon, M., ... Julia, C. (2020). Performance of the front-of-pack nutrition label nutri-score to discriminate the nutritional quality of foods products: a comparative study across 8 european countries. *Nutrients*, 12(5), 1303. <https://doi.org/10.3390/nu12051303>

... A scientific report has also suggested a good discriminating performance of the Nutri-Score for the food offered in Belgium, Italy, Netherlands, Spain, Sweden, Switzerland and United Kingdom, using the data from the **Open Food Facts** database, a collaborative online project gathering food composition data on manufactured foods from many countries worldwide [36]. ...

... These findings are complementary to studies conducted in other food databases such as **Open Food Facts** providing data on multiple industrial foods of different brands. ...



Monteiro, C. A., Cannon, G., Levy, R. B., Moubarac, J.-C., Louzada, M. L., Rauber, F., ... Jaime, P. C. (2019). Ultra-processed foods: what they are and how to identify them. *Public Health Nutrition*, 22(5), 936–941. <https://doi.org/10.1017/S1368980018003762>

... A cell phone app created by the non-profit organization **Open Food Facts**, based in France, already enables consumers to identify among more than 145 000 packaged products the more than 75 000 that are ultra-processed. ...



Other notable research projects using OFF



EREN Nutri-Net Santé, 2009–now

Study consumption habits and health of a **cohort of 170,000+ participants over 10+ years**. By cross-referencing detailed consumption records with Open Food Facts' information on ingredients, additives, and nutritional content, researchers could more accurately **assess the long-term health impacts of various food components**, including additives and ultra-processed foods.

Read also: [Consumption of certain emulsifying food additives is associated with an increased risk of cancer \(Feb 2024\)](#)

Menichetti Lab, 2023

[Machine learning prediction of the degree of food processing](#)

Pr. Giulia Menichetti used OFF to help **train a machine learning model that predicts how processed a food is**, based on its nutritional content and additives. The model, called **FoodProX**, gives each product a score from 0 (unprocessed) to 1 (ultra-processed). OFF help in the testing of the model on over 230,000 products.



Advancing science through open data



Iris Van Dam & Stefanie Vandevijvere (2022)

Benchmarking the nutrition-related commitments and practices of major French food companies

<https://link.springer.com/article/10.1186/s12889-022-13780-y>

... For packaged food and non-alcoholic beverage manufacturers and supermarkets (own-brand products), the healthiness of the complete product portfolios was analysed using **Open Food Facts** data for France in 2018...

As of 2025-04-30, Google Scholar is returning

857 results for the search “Open Food Facts”:

<https://scholar.google.com/scholar?q=%22open+food+facts%22>

... today, Anna Leibinger, Oliver Huizinga, Carmen Klinger, Elochukwu Okanmelu, ...
ert, Eva Rehfuess, Peter von Philipsborn (2023)

Application of the WHO Nutrient Profile Model to products on the German market:
Implications for proposed new food marketing legislation in Germany
<https://www.medrxiv.org/content/10.1101/2023.04.24.23288785v1>

Methods. We applied the WHO NPM to a random sample of 660 food and
beverage products across 22 product categories on the German market drawn from
Open Food Facts, a publicly available product database. ...

Lino Galiana, Milena Suarez Castillo (2022)

Fuzzy matching on big-data: An illustration with scanner data and crowdsourced
nutritional data

https://www.linogaliana.fr/pdf/JMS2022/S28_2_ACTE_GALIANA_JMS2022.pdf

... In this paper, we enrich a large retailer dataset with nutritional information
extracted from **Open Food Facts**, completed with the ANSES Ciquel dataset...

Gero Laurenz Höhn, Martijn Huysmans
Healthy Food Traditions? Nutritional
Geographical Indications

<https://lirias.kuleuven.be/retrieve>

... Thus, we base our quantitative
database of **OpenFood Facts** (https://openfoodfacts.org) on
to thousands of observations in
from 10 countries...

Printout of food products from packaging data.
<https://doi.org/10.3329/pjoss.03329.pdf>

... interfaced to the **Open Food Facts**
... packaging information...
... contributors for creating the database this

Rodríguez-Martín, N.M.; Córdoba, P.; Sarriá, B.; Verardo, V.; Pedroche, J.; Alcalá-Santiago,
Á.; García-Villanova, B.; Molina-Montes, E. (2023)

Characterizing Meat- and Milk/Dairy-like Vegetarian Foods and Their Counterparts
Based on Nutrient Profiling and Food Labels. *Foods* **2023**, *12*, 1151.

<https://doi.org/10.3390/foods12061151>

... Nutritional data of the food products were obtained from websites of supermarket
and food companies, and from **Open Food Facts**. The latter was the main information
source used to retrieve the food products. ...

Rakhmawati, N. A., Firmansyah, A. A., Effendi, P. M., Abdillah, R., Cahyono,
Auto halal detection products based on euclidian distance and cosine similarity
are collected from **Open Food Facts**, Institute For Foods, Drugs, And
Journal on Advanced Science, Engineering and Information Technology, *8*(4),
<https://doi.org/10.18517/ijaseit.8.4-2.7083>

In this study, we build a system that can compare products that have
certified halal with halal certified products based on its ingredients. The
are collected from **Open Food Facts**, Institute For Foods, Drugs, And
Indonesian Council Of Ulama (LPPOM MUI) and our halal system. ...

... **Open Food Facts** (<https://world.openfoodfacts.org/>), a crowdsour
database system provides some of the products that are labelled as ...

A growing interest worldwide



THE “OPEN FOOD FACTS FOR SCIENCE” PROGRAM



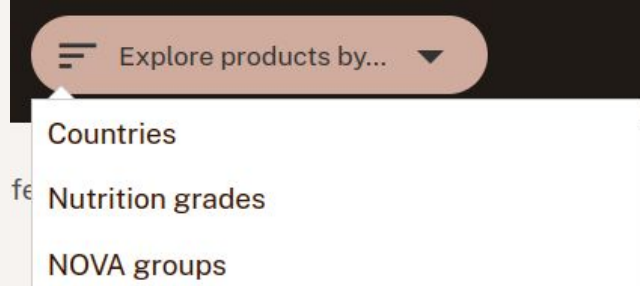
Data and tools accessible on the shelf (1/2)



A global open Database

- ±4 M products
- available in 180 countries & 40 languages to scale your research across the world

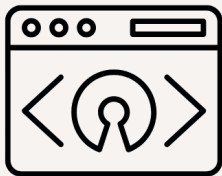
+ Support*



- Explore products by ~30 **facets**: countries, categories, brands, labels, ingredients, ...
- Many [exports](#): MongoDB, JSONL, CSV, Parquet
- [Mirabelle](#): a tool for complex queries and to build your own datasets, thanks to SQL language
- Products with data quality errors can be filtered ([218+ control checks available](#))
- Completeness indicator
- [Quick graphs](#)
- Partnership with [HuggingFace](#) (daily Parquet)

*Within the limit of [a few hours](#) per project. E.g.: we can help with advanced queries, or building tools for your research.

Data and tools accessible on the shelf (2/2)



Open Source, Open Contents

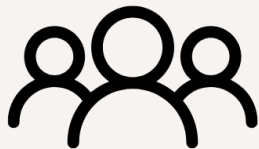
- ALL our data, software, contents, etc., are fully Open.

+ Support*

- What is coded for a project is [published](#) as Open Source and **immediately available** for all purposes and projects
- **Docs:** 3000 pages' [wiki](#), tech [documentation](#), tutorials, code snippets available; eg. [Reusing our data](#) guide
- **API:** if you need data in real-time or if you need history of a product ([doc](#))
- [SDKs](#): ready to use software components for your apps to access Open Food Facts data
- [Machine learning](#) to complete contributors' data (models available): eg. category prediction

*Within the limit of **a few hours** per project. E.g.: we can help with advanced queries, or building tools for your research.

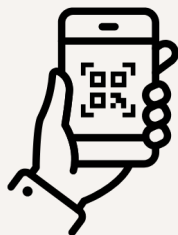
Leverage the community



- 30,000+ contributors from 180 countries
- Loving challenges
- Helping science is a very special motivation

- Join our Slack **#science**
- Exchange with peers
- Join regular webinars with researchers
- Publish your own products' data on Open Food Facts to **benefit from community effort** (completion, corrections...)
- Organise **special operations** to collect data upstream of your research for special product categories or countries of interest
 - E.g. [Tackling food packaging operation](#)

How to contribute to the OFF for Science program?



Enrich the database

- Adding food products
- Contribute to taxonomies
- Convince students to enrich the database
- Organise a Scan Party



We'd love your feedback!

- Share your usage experience in a blog post/a short webinar
- Fill in the Directory form of studies related to OFF
- Give us your feedback to improve researchers' experience



From a private spreadsheet...

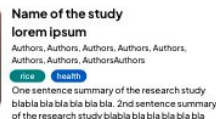
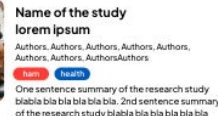
...To a public directory



Add my research project

654 studies

Name of the study
lorem ipsum
Authors, Authors, Authors, Authors, Authors,
Authors, Authors, AuthorsAuthors
ham **health**
One sentence summary of the research study
blabla bla bla bla bla. 2nd sentence summary
of the research study blabla bla bla bla bla



Help us highlight our collective impact by adding your project!

Opportunities seeking funds together



Current research Projects

- Horizon Europe : [DivinFood](#), [Foodture](#)
- [NutriSight](#) (DRG4Food)
- [FoodContact](#) (INSERM, EREN)
- U-TRANS (Institut Gustave Roussy)
- [Nutrinet-Santé](#) (EREN)

Currently involved in 6 research projects

Topics of interest:

Health

Nutrition

Environmental impact

Open data

Citizen science

Taxonomies

Machine learning

Education

Public policies

Food offer monitoring

We are open to collaborate!



Our vision for what's next (1/3)



Open Food Facts for Science: a set of processes and tools to facilitate the reuse of our data for scientific research:

Collect

- Upstream, **data collection processes** formalized for scientific use (citizen science protocols, ...)
- **Custom features in the app** for their research needs: for example, the ability to collect new types of data not yet available in Open Food Facts (such as products targeting children, etc.)

Fix

- **Cleaning** of incorrect or erroneous data
- Identification of data with **outliers** or exceptional values
- More **computed scores and data**: better ingredients' analysis (more languages, better precision); front-of-package nutrition symbol (Canada); Nutrition Info box (USDA); octagons from Latin-America; Health Star Rating (West-Pacific), Health Nutritional Index (HENI)

Enrich

- **Interoperability with more databases** (today: Ciqua, Agribalyse, Eurocode2, World Customs Organizations Harmonized System...; tomorrow: Foundation Foods (USDA), Foodex2 (EFSA), Oqali...)

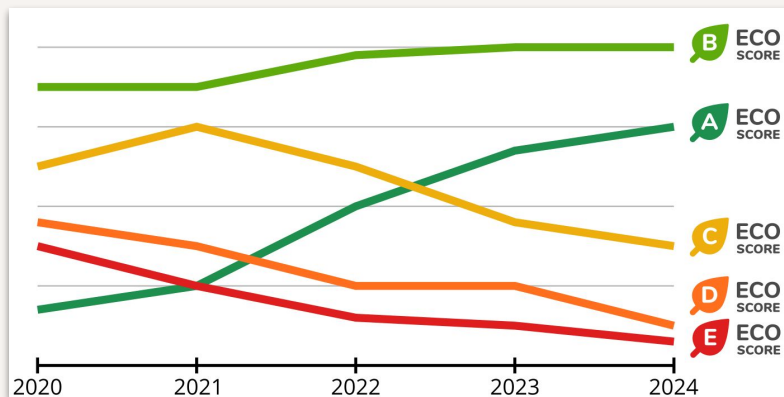
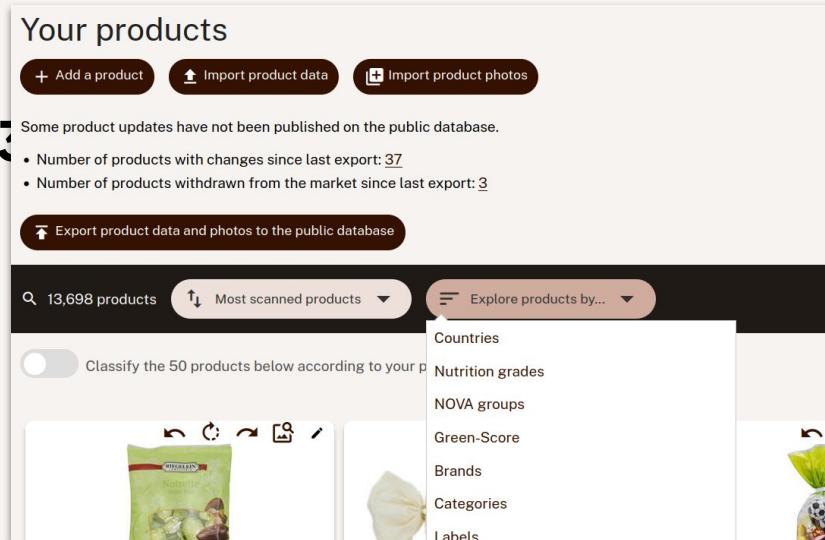
Extract

- **Automatic statistical pre-calculations**: for each data point, pre-calculated statistics for better understanding of the data — sample size, mini/max values, average, median, most frequent value, etc.
- **Multi-criteria** data extraction simplified




Our vision for what's next (2/3)

- The **Pro platform for scientists**: a personalized and **private** platform enabling to take advantage of Open Food Facts' tools: data storage, control and cleaning, calculated data, machine learning, downloads, etc.
- A new platform to **track the evolution of products**
 - identify the markers of product evolution (nutrition, ingredients, scores...)
 - allow monitoring evolution: facets, graphs...



Our vision for what's next (3/3)

 Open Prices



Open Prices: launched in 2024, the project is already showing promising results

- 100,000 data points worldwide

Other product databases:

- Open **Beauty** Facts: 54,000 products
- Open **Products** Facts: 27,000 products
- Open **Pet Food** Facts: 14,000 products

Not yet as successful as OFF, but we're actively working on it



Q & A

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**Thank you
for your attention**



Contacts

**Join the
directory**

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- Manon Corneille, Partnerships Manager, manon@openfoodfacts.org