EDB
Eaternity Database

Eaternity Database (EDB) – Scientific Foundation for EOS

Since 2009, Eaternity has built a peer-reviewed CO_2eq database for food—the Eaternity Database (EDB). The EDB currently contains CO_2-equivalent values and unit processes for over 950 different food items and 8 processing models. It is currently the largest and most comprehensive database to carry out CO_2 calculations of meals and restaurant purchases. Additionally, the EDB includes detailed nutrition facts for all items.

Key Features

- **Comprehensive Life Cycle Inventory**: Detailed environmental data covering the complete lifecycle—from production, processing, transportation, and preservation to consumption—accounting for factors like farming methods (organic or conventional), greenhouse cultivation, seasonality, and sustainability certifications (e.g., biodiversity, fair trade).

- **Robust Scientific Methodology**: Data meticulously sourced from peer-reviewed scientific literature, international databases, and validated industry reports to ensure high accuracy and reliability.

- **Regular Updates and Adaptability**: Continuously revised to incorporate the latest research findings, dynamically adapting to emerging insights in food sustainability.

- **Transparency and Accessibility**: Open and detailed documentation regarding data sources, methodologies, and assumptions enables independent verification and builds trust.

- **Extended Environmental Indicators**: Beyond CO_2 equivalents, the EDB includes water footprints, animal welfare metrics, deforestation risks, and comprehensive nutritional data.

- **Semantic Annotations and Integration**: Data points are semantically enriched through a standardized glossary, facilitating clear interpretation, data aggregation, and seamless integration with EOS calculation models.

Integration with External Databases

The EDB integrates several renowned external databases for comprehensive coverage and methodological rigor:

- **Ecoinvent**: Globally recognized life cycle inventories for numerous products and processes.

- **Agribalyse**: Detailed environmental impact data specific to European agricultural products.

- **Hestia (University of Oxford)**: Harmonized, open-source agricultural environmental data.

- **Quantis – World Food Database** and **Agri-footprint (Blonk)**: Detailed global life cycle inventories.

Collaborations with Zurich University of Applied Sciences (ZHAW), ETH Zurich, Research Institute of Organic Agriculture (FiBL), and University of Zurich (UZH) further enrich the database with specialized scientific knowledge and validation.

Advanced Calculation Models

Eaternity develops advanced calculation models estimating CO_2eq emissions across food processing steps (production, transportation, conservation, processing). These models dynamically integrate supplier information and probabilistically estimate missing data through statistical methods, ensuring accuracy and scalability. Initially developed in collaboration with ZHAW, many models are now independently maintained by Eaternity's dedicated team.

Commitment to Open Knowledge Sharing

Eaternity advocates strongly for open data and scientific collaboration. Our vision is to contribute to a scientific knowledge hub dedicated to food sustainability. We provide infrastructure for effective data storage, management, and harmonization, governed responsibly to ensure transparent and regulated data exchange. By openly sharing our findings, we aim to accelerate global progress toward sustainable food systems.

About Eaternity

Eaternity is dedicated to establishing climate-friendly meals in society through innovative software that enables restaurants to automatically measure and track the CO_2 footprint of meals and purchases daily.

Contact

For further information, feedback, or to contribute an LCA or review to the database, please contact our science team at science@eaternity.ch.