



Global Metrics for Sustainable Feed

GFLI LCIA & IT Guidance document

LCIA database version 4.0 (publ.
Sept, 2026)

How to read and use the

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1. Introduction

The following guidance document is created for the understanding of the Lifecycle Impact Assessment version of the GFLI database, which is recently updated into an IT-platform on www.globalfeedlca.com. It correlates with the latest version of the GFLI database, version 4.0, which was updated on September 2026.

The GFLI database was officially launched on November 12, 2020, starting a new phase for the Institute focused on maintaining and expanding the database while adhering to international LCA methodologies and principles. This phase welcomes corporations, associations and other entities with an interest in environmental footprints to join as a member or strategic partner, and to collaborate via data provision and/or database use. Over the coming years GFLI aims to expand the global coverage of the database as a means to becoming the global standard for feed LCA data as it has envisioned.

The GFLI database is a collection of feed ingredient datasets collected using Life Cycle Assessment (LCA) methodology. LCA is a method to evaluate the use of resources and emission of pollutants during the life cycle of a feed ingredient. The GFLI database aims at software neutrality/interoperability to facilitate uptake of the GFLI data by practitioners working on environmental assessment of animal products.

The following guidance document has been set up to aid data users to provide clarification on the usage of the GFLI data(base). Please realize that Lifecycle Assessment is a discipline and requires a specific know-how to use it correctly. As the world of LCA is maturing and gaining more regulation for rightful use of the data (in particular with the communication of one's calculated LCA footprint), it is essential to remain up to date with progressions in the market and what is relevant for the purpose you're using LCA.

Please note that there are other documentation available which fall in conjunction with this piece. For more information, we refer you to one of these documentations:

- To understand the methodology behind the database, how data is generated in the GFLI database and how to proceed with such a 'data project', refer to the GFLI methodology and procedures document here: <https://globalfeedlca.org/gfli-database/methodology-scope/>
- How you are allowed to use the GFLI database depends on the license signed. The end-user license agreement (EULA) is within the license signed, and can also be found on the IT-platform under 'EULA': <https://globalfeedlca.com/eula>

DISCLAIMER: GFLI and its data providers cannot be held accountable for any liabilities and/or damages (actual and consequential) that result from the use of the GFLI data, this document, and resulting environmental footprints.

1.1 GFLI database formats

The GFLI database consists of three formats,

- Life cycle impact assessment (LCIA)
 - o Product environmental footprint (PEF) version
 - o GHG Protocol SBTI-FLAG version
- Aggregated system processes (inventory data)
- Disaggregated unit process level data

Life cycle impact assessment (LCIA)

The Lifecycle impact assessment is the measurement of emissions through a specific impact assessment method. This allows for the output of different ingredients calculated through that method in order to compare various ingredients, and use the output as the basis for measuring an average carbon footprint for compound feed or other mixed ingredients.

The GFLI database currently includes two methods, the ReCiPe Midpoint (H) (2016) and the Environmental Footprint 3.1 (EF3.1).

Two types of databases are available in LCIA-format: the PEF version of the database and the GHG Protocol SBTI-FLAG version of the database. The latter version of the database is a new product of GFLI and available from September 2026 onwards.

Aggregated system processes (LCI)

The system processes is the aggregated inventory of inputs and outputs of each dataset, and allows for flows to be manipulated to perform contribution or sensitivity analysis. Due to the aggregation, only the resources (input), output (ingredient and emissions related to its production) are shown. The interconnectivity within the system boundary are not visible, and would require the disaggregated unit process level data for full transparency. With the environmental impacts, own processes can be added to connect the data and create 'building blocks' to see the changes to the end-product's environmental footprint.

Disaggregated unit process level data

Unit process level is the disaggregated inventory of inputs and outputs to the level used for modelling: all details of how each dataset has been established and its linked

processes are included. It allows for flows to be manipulated to perform contribution or sensitivity analysis. The disaggregated LCI is available under a license in Simapro.

1.2 Logging into the IT-platform

Anyone can create an account to access the platform by going to www.globalfeedlca.com/login. We'd recommend signing up with your work e-mail address so that this may be linked with the right license once this is in place.

After creating your account, you'll receive a verification mail in your specified account's mailbox with a temporary password (please double-check the spam or junk mailbox, it is sent out through info@globalfeedlca.org). You can now access the platform and see the available datasets in the database.

Currently, the IT-platform only shows the impact assessment format (LCIA). If you license the system processes or unit process level data, you will receive a direct copy of the .csv files for integration into a LCA software tool (currently, only a Simapro version is available).

In order to see the actual emission factors, in ReCiPe or EF3.1 impact assessment method and within the different allocations, a license is required. After the appropriate license is signed, you'll receive an email when your account is activated to view the emission factors.

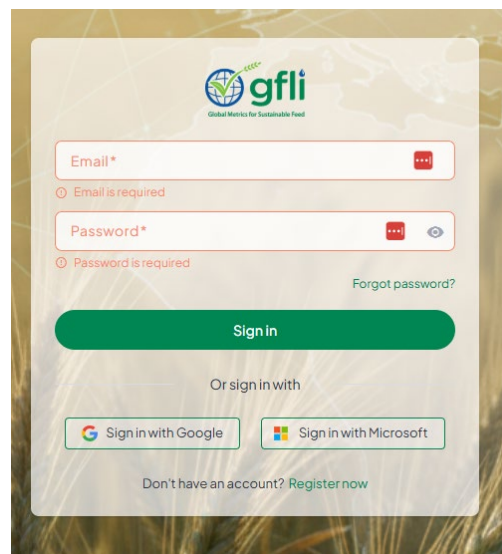
1.3 Unlocking the emission factors

A valid license is required for the viewing and usage of the GFLI database and the IT-platform.

Before proceeding, we request you to read our [data use policy](#) regarding the different licenses. The [fee structure](#) can be found online on the GFLI webpage.

All versions of the database require you to sign a license agreement. In order to proceed with this, please send an e-mail to info@globalfeedlca.org with the following details:

- Name, title, and email of the person that will sign the License Agreement
 - In case the signing person will not be the user(s) of the database, include the name and e-mail address(es) of the user(s).



- Company registration no., principal office address
- Desired database type (Impact Assessment, System Processes, or Unit Process)
- Desired license type (commercial, developer, or research – note that research is only available for accredited research institutes and universities)
- Number of licenses requested:
 - For Commercial and Research license requests: number of licenses requested (i.e. number of internal end users who will use the database).
 - For Developer license requests: name of the tool which the data is requested for, and number of internal and external end users who will use the database/tool.
- Member status (Member or non-member)

After your request, you'll be sent the license agreement ready for signature based on the provided information. Once signed, you'll receive the payment options through GFLI (we bill through Bill.com in USD, the exchange rate USD-EUR at the time of billing applies!

Always consult the EULA before using the database.

1.4 IT platform features

Some user design features are currently being considered for the tool. In the upper right corner of the screen you currently see a language option and moon. We currently only support an English version of the database. More languages will be considered in the future.



The moon icon allows for a dark view (black background) instead of the light view.

If any of the information about the company or user must be changed, please contact info@globalfeedlca.org.

2 How to read the database

With the integration of the database into this IT-platform, the usual visual of the GFLI has changed slightly. The information as you're used to is still intact, and through this chapter we aim to inform you about how you can read the database accurately.

In the first page of the website, also found under the tab 'process', the full set of datasets are listed, with their respective data source, year of publication, market mix, description (Figure 1) and if scrolled to right the unique codes for each dataset.

Export

Search

☐	Id		Name	Data source	Dataset unit	Year of publication	Market mix	Description
☐		Search	Search	Search	Search	Search	Search	Search
☐	...	1920	Yellow grease, poultry, at processing (US)	AFIA	ton	2024	Not applicable	Source of data: GFLI AFIA. C DQR = 2.16 (P = 3.00, TIR = 2. TeR = 1.73 and GR = 1.84). Thi
☐	...	1919	Yellow grease, mixed species, at processing (US)	AFIA	ton	2024	Not applicable	Source of data: GFLI AFIA. C DQR = 2.16 (P = 3.00, TIR = 2. TeR = 1.73 and GR = 1.84). Thi
☐	...	1918	Yellow grease, beef, at processing (US)	AFIA	ton	2024	Not applicable	Source of data: GFLI AFIA. C DQR = 2.16 (P = 3.00, TIR = 2. TeR = 1.73 and GR = 1.84). Thi
☐	...	1917	WPC 80, dried 96% DM, at processing (NL)	AFP 7	ton	2025	100% local	Source of the data is: AFP 7. Overall DQR = 2.11 (P = 2.33, 2.19, TeR = 2.09 and GR = 1.8
☐	...	1916	WPC 60, dried 96% DM, at processing (NL)	AFP 7	ton	2025	100% local	Source of the data is: AFP 7. Overall DQR = 2.11 (P = 2.33, 2.19, TeR = 2.09 and GR = 1.8
☐	...	1915	WPC 30, dried 96% DM, at processing (NL)	AFP 7	ton	2025	100% local	Source of the data is: AFP 7. Overall DQR = 2.11 (P = 2.33, 2.19, TeR = 2.09 and GR = 1.8

Figure 1 Overview of the full set of datasets available in the GFLI database, which can be found under the tab 'Process'.

2.1 Overview of datasets

The database version 4.0, publication date September, 2026, consists of 2,040 ingredients. In this overview you'll find the available datasets as indicated in the GFLI database, with the source, reference year (latest data collected), and the total data quality rating of that dataset. The term industry data is used to represent primary data sourced at company level, aggregated into a representative industry average.

The source describes the name of the project the data was collected. These are simplified names to identify the project of the data generation. In table 2 an overview of all the sources currently within the GFLI database version 4.0 (publication date September, 2026). The source indicates the name, which may be a database like Agrifootprint, an association name, or a combination name of what the project encompasses. The term

industry data is used to represent primary data sourced at company level, aggregated into a representative industry average. The reference year indicates the latest data collected to compose the dataset. Most datasets include multiple years of production, thus only the latest year is indicated as reference year. Also note that this is not the same as the year of publication.

Table 1 GFLI sources and projects

Source	Information about the project	Reference year
AFP 7.0	Datasets created through the GFLI default method of statistical and open source data (FAOstat 2018–2022), by Blonk Consultants.	2022
AFP additional	Datasets created through the GFLI default method of statistical and open source data (FAOstat production data from 2014–2018, FAOstat cultivation data from 2018–2022) that are currently not available in AFP, by Blonk Consultants.	2022
AFP – Nevedi	Datasets created conform the GFLI default method of statistical and open source data (FAOstat 2018–2022), by Blonk Consultants, funded by the Dutch Feed Association Nevedi.	2022
Branded data (Feb'22 pilot)	Datasets conform the GFLI branded data methodology from the pilot held between February 2022 to March 2023. This is company-specific ingredients based in part or wholly on primary data.	2019 to 2023
Branded data (Oct'23 V1 methodology)	Datasets conform the GFLI branded data methodology version 1, published October 2023 following the pilot of branded data. This is company-specific ingredients based in part or wholly on primary data.	Various
EAPA	Datasets created through industry data sourced from the European Animal Protein Association (EAPA) members.	2018
EFPRA	Datasets created through industry data sourced from the European Fat Processors and Renderers Association (EFPRA) members	2021
Feedgrade egg processing industries	Datasets created through industry data sourced from European egg processing industries.	2023
GFLI AFIA	Processed ingredients created through industry data and open source data, commissioned by the American Feed Industry Association (AFIA)	Various
GFLI BFAN	Datasets created through industry data sourced from the German Federal Association for By-Products as Animal Feed (BFaN) members	2019
GFLI Brazil	Datasets created through higher tier modelling sourced from the Brazilian Agricultural Research Corporation (Embrapa).	2021
GFLI Canada	Datasets created through industry data on cultivated ingredients and complemented by statistics from Statistics Canada for missing data, by ANAC	2019

GFLI group totals	Datasets created through averaging available data for the European region, sourced from the PEF screening study for feed (2018)	2018
GFLI Wet-coproducts	Datasets created through industry data for the European region, sourced from Duynie Group	2022
Individual data projects	Dataset created through industry data for the processing, sourced from individual companies with a representative market share of the country in scope	2024
SEGES Innovation	Datasets created through regionalized statistical data from Denmark, sourced from SEGES Innovation	2022
UBC – Pulse Project	Datasets created through industry data surveyed by the University of Columbia for Pulse Canada (association)	2020
UKFFPA	Datasets created through industry data sourced from the Former Foodstuffs Association of the United Kingdom (UKFFPA) members.	2019
USDA	Created through statistical data from the USDA.	2017
VIDO	Datasets created through industry data sourced from the Dutch Former Foodstuffs Association (VIDO) members.	2019

2.2 Unique identifier code

For consistency of the database and for simplification for the users of the database, all datasets have a unique ID-code, creating a unique alpha-numeric codes for the datasets in the database, which can be used for linking to other system (e.g. formulation system) and identification of the datasets. Each code and name is unique, preventing multiple datasets from having the same name and code. The code can be used to search in the database for datasets based on specific features.

2.2.1 Code features

The alphanumeric code is based on 10 features of the dataset.

1. Class of the product (numeric).
2. Subclass of the product (numeric)
3. Subgroup (numeric). The subgroup identifies the name of the original ingredient.
4. Subgroup2 (numeric). The subgroup identifies the name of the product.
5. Boundaries (numeric). The available boundaries are: Farm gate, Factory gate or storage gate.
6. Country code (alpha). Each country has a unique three-lettered ISO-code.
7. State code (alpha). For some datasets the geographical reference is available on state level, for these datasets the two alpha code is available. Datasets that are not available on state level are indicated as 00.

8. Allocation (alpha). The allocation types can be economic, energy or mass allocation.
9. Impact assessment method (alpha). The impact assessment method is Environmental Footprint 3.1 (EF3.1) or ReCiPe.
10. Tier level (numeric). There are six tier codes available: three codes are available for sectoral/regional datasets and three codes are available for branded datasets.

The ten beforementioned feature generates part of the total code of a dataset, combining the 10 parts formulate the code for the dataset. Each dataset has six codes that are distinguished based on allocation type (economic, energy and mass) and impact assessment type (EF 3.1 and ReCiPe). The other features in the code are the same within a dataset. An example of the different codes for each dataset is provided in Table 2.

Table 2. Example of features and coding of a dataset. Each dataset has multiple codes due to differences in allocation type and impact assessment method. Within a dataset the class, subclass, subgroups, boundaries, country code and tier level are the same for the different codes. The codes within a dataset differ based on allocation type and impact assessment method.

Allocation and method	Code of dataset
Barley: Grain, dried; Storage gate {DEU}	
Overarching	02-01-009-095-3-DEU-00-T1
Economic allocation - EF3.1 method	02-01-009-095-3-DEU-00-T1-Eco-EF
Energy allocation - EF3.1 method	02-01-009-095-3-DEU-00-T1-Ene-EF
Mass allocation - EF3.1 method	02-01-009-095-3-DEU-00-T1-Mas-EF
Economic allocation - ReCiPe method	02-01-009-095-3-DEU-00-T1-Eco-Re
Energy allocation - ReCiPe method	02-01-009-095-3-DEU-00-T1-Ene-Re
Mass allocation - ReCiPe method	02-01-009-095-3-DEU-00-T1-Mas-Re

2.3 Information tab

Once you click on one of the ingredients, you'll see a tab such as below. The following subchapters explain the different information that can be found here.

Allocation options

Information
Economic
Energy
Mass

Name *
Alfalfa, dried, at farm (CA-ON)

Data source
GFLI Canada

Data provider
▼

Year of publication
2019

Nitrogen content
1.96

Phosphorus content
1.54

DQR time
1.96

DQR tech
1.54

Dataset type *
Cultivated ingredient

Dataset unit
ton

Dry matter content
850

Energy content
17.07

DQR total
1.96

DQR precision
2.25

DQR geographic
2.07

Market mix
Not applicable

Description
Source of the data is: GFLI Canada. Overall DQR = 1.96 (P = 2.25, TIR = 1.96, TeR = 1.54 and GR = 2.07) This process describes the drying of Alfalfa. The System boundaries of this process are from farm gate to farm gate. The process ignores the losses due to moisture loss, storage and other factors since these are already incorporated on the crop cultivation stage. Included activities include electricity use as well as the silo capital good. No propane use is inventoried for Alfalfa. The following data is included for cultivation of .

Data source
correlating to way
of data collected

Product properties

Data quality rating

Product properties

Market mix

Figure 3 Information tab in the IT-platform

2.3.1 Product properties

Some values relevant for the allocation of the mass and energy are added to clarify such values, aligned with chapter [3.2.3 of the GFLI methodology document](#). These columns include dry matter content (DM), energy content, and N- and P-content. These data points are required for data-in providers to deliver in order to calculate specific impact categories. Such meta-data may consolidate the ingredient's composition. There is no intention to include nutritional datasets to the database.

2.3.2 Data Quality Rating (DQR)

The Data Quality Rating provides an indication of the total (overall) quality of a dataset and includes four quality criteria of a dataset. An overall score of 1 or close to 1 means the data is of good quality, recent sources, and representative for the ingredient and its production process, whereas a DQR of 3 or close to 3 indicates a lower representativeness, lower quality data, or older sources. Below shows how the DQR is presented in the GFLI database.

The Data Quality Rating system originates from the European Union's Product Environmental Footprint Category Rules (PEFCR). It's a semi-quantitative assessment of

four quality criteria of a dataset (see table). The system allows for a form of assessment of the quality of the data.

Table 3. Data quality rating abbreviations according to the PEFCR Feed

Abbr.	Full name	Meaning
TeR	Technological-Representativeness	how representative is the technology of the source data compared to what is described in the title and meta data
GR	Geographical Representativeness	How representative are the datasets for the geography used in the datasets compared to what is stated in the "location"
TiR	Time-Representativeness	How old is the collected data to be representative of a product
P	Precision/ uncertainty	How precise is the data derived and what level of uncertainty is included with this derivation.

More information on Data Quality Rating can be found in the [EU PEFCR feed](#) & the [GFLI methodology](#).

2.3.3 (Process) Description

The process description provides detailed information for the database-users, summarizing the most important features of the process behind the dataset. Goal of the process description is to clarify choices that have been made within a process, noteworthy choices due to remarkable circumstances and, if applicable, include the source (accessible for the database-users) substantiating a choice made during data collection. The datasets should include at least the minimum information on:

- For branded datasets: Specify the type and purpose of the ingredient.
- System boundaries;
- Reference year of the data, if data is collected over multiple years, please specify the complete reference time frame;
- Short description of process(es) behind the dataset: argument why a process is included or purposely not included in the LCA.

2.3.4 Market mix

The market mix indicates where the processed ingredient's country sources are from. More information about the different market mixes is available in Table 4. This in most cases is created by using trade data (from FAOstat between 2018 and 2022 in the case of data source: Agrifootprint) which raw commodities are imported to the country of destination and how much is processed within that same country.

Relevant emission data is not always present, meaning that data cannot be included (hence, not reaching 100% representativeness). A recalculation is executed to reach this a 100% coverage by using the available country data to meet this.

The full list of the market mix currently applicable in the database are found in Annex 1.

Table 4 clarifications of terminology used within the Market Mix tab

Indication	Explanation
Not applicable	Cultivated ingredients or locally processed ingredients do not use a market mix.
100% local	Ingredients which are processed in the country of production origin; where the trade data does not indicate any import of the raw commodities to process these alongside locally produced cultivation.
[ingredient – country code]	The code in the market mix tab and its corresponding market mix can be found in Annex 1.
Production mix	The commodities with this indication do not reflect a market mix listed separately, but the available datasets within that certain region, weighted into a regional average based on FAOstat trade data on production. The production mix only indicate Region of Europe or Global figures, of which the available country data is available in the database (these datasets exclude inbound transport).
See PEFCR feed	These datasets are European averages based on the initial PEF study, no market mix applies as a European average is taken based on collected data (annex 7 in the PEFCR feed for Food Producing Animals, 2024): https://fefac.eu/wp-content/uploads/2025/02/PEFCR_Feed_FinalPEFCRs-update-10-02-2025.pdf

2.4 Emission factors

In the 'Economic', 'Energy', and 'Mass' tab you'll find the respective emission factors related to the allocation of your choice, alongside the choice between ReCiPe and EF3.1 impact assessment method.

The GFLI database has impact categories to calculate an environmental footprint, which includes more than just carbon emissions relevant for a carbon footprint. The following impact categories are currently included from the methods ReCiPe and EF3.1. For alternative impact assessment methods, licensing the system processes (LCI) or unit process level will allow the execution of an impact assessment.

2.4.1 EF3.1

The European Commission's 'Environmental Footprint 3.1', usually referred to as EF3.1, is an impact assessment method to categorize the emissions as described in Table 5.

Table 5 Impact categories for EF 3.1 ([source](#))

Abbreviation	Impact category	Explanation of the impact category
Ap	Acidification (mol H ⁺ eq / ton product)	Potential decline of coniferous forests and increase in fish mortality caused by deposition of air-borne emissions in water and soil. Such as combustion processes in electricity, heat production, and transport. The potential impact of substances contributing to acidification is converted to the equivalent of moles of hydron (general name for a cationic form of atomic hydrogen, mol H ⁺ eq).
Gwptotal	Climate change (kg CO ₂ eq / ton product)	The increase in the average global temperatures as result of greenhouse gas (GHG) emissions. The greatest contributor is generally the combustion of fossil fuels such as coal, oil, and natural gas. The global warming potential of all GHG emissions is measured in kilogram of carbon dioxide equivalent (kg CO ₂ eq), namely all GHG are compared to the amount of the global warming potential of 1 kg of CO ₂ . Global warming potential is split in various types of related emissions relevant in agricultural processes, like biogenic (methane gasses from ruminant production for animal-based ingredients or naturally being formed through rice production), fossil (fuels), land use and land use change as well as peatland oxidation. The share of climate change not related to LUC and peat oxidation and "climate change – fossil (only peat)" is to show the share of climate change related to peat oxidation.
Gwpbiogenic	Climate change – Biogenic (kg CO ₂ eq / ton product)	
Gwpfossil	Climate change – Fossil (incl peat ox) (kg CO ₂ eq / ton product)	
Gwpluluc	Climate change – Land use and LU change (kg CO ₂ eq / ton product)	
Gwpexcl	Climate change – excl LUC / peat ox (kg CO ₂ eq / ton product)	
Gwpeat	Climate change – Fossil (only peat) (kg CO ₂ eq / ton product)	
Etpfw	Ecotoxicity, freshwater (CTUe / ton product)	The potential toxic impacts on an ecosystem, which may damage individual species as well as the functioning of the ecosystem (potential accumulation of toxic impacts in living organisms. The unit of measurement is Comparative Toxic Unit for ecosystems (CTUe). This is based on a model called USEtox.
ETPfworg	Ecotoxicity, freshwater – inorganics (CTUe / ton product)	
Etpfworg	Ecotoxicity, freshwater – organics (CTUe / ton product)	
Pm	Particulate matter (disease inc. / ton product)	Measuring the adverse impacts on human health caused by emissions of Particulate Matter (PM) and its precursors (e.g. NO _x , SO ₂). The potential impact of is measured as the change in mortality due to PM emissions, expressed as disease incidence per kg of PM _{2.5} emitted.
Epmarine	Eutrophication, marine (kg N eq / ton product)	Eutrophication forms when substances containing nitrogen (N) are released to the ecosystem, such as agricultural use of fertilisers and combustion processes. For the marine environment this will be mainly due to an increase of nitrogen (N). The potential impact of substances contributing to marine eutrophication is converted to the equivalent of kilograms of nitrogen (kg N eq).
Epfreshwater	Eutrophication, freshwater (kg P eq / ton product)	Eutrophication forms when substances containing phosphorus (P) are released to the ecosystem, such as agricultural use of

		fertilisers. The most significant sources of phosphorus emissions are sewage treatment plants for urban and industrial effluents and leaching from agricultural land. The potential impact of substances contributing to freshwater eutrophication is converted to the equivalent of kilograms of phosphorus (kg P eq).
Epterrestrial	Eutrophication, terrestrial (mol N eq / ton product)	Eutrophication arises when substances containing nitrogen (N) or phosphorus (P) are released to ecosystems. The potential impact of substances contributing to terrestrial eutrophication is converted to the equivalent of moles of nitrogen (mol N eq).
Htpc	Human toxicity, cancer (CTUh / ton product)	This indicator refers to potential impacts, via the environment, on human health caused by absorbing substances from the air, water and soil. Direct effects of products on human health are currently not measured. The unit of measurement is Comparative Toxic Unit for humans (CTUh). This is based on a model called USEtox.
Htpcinorg	Human toxicity, cancer - inorganics (CTUh / ton product)	
Htpcorg	Human toxicity, cancer - organics (CTUh / ton product)	
Htpnc	Human toxicity, non-cancer (CTUh / ton product)	The potential impacts, via the environment, on human health caused by absorbing substances from the air, water, and soil. The unit of measurement is Comparative Toxic Unit for humans (CTUh). This is based on a model called USEtox.
Htpncinorg	Human toxicity, non-cancer - inorganics (CTUh / ton product)	
Htpncorg	Human toxicity, non-cancer - organics (CTUh / ton product)	
Irp	Ionising radiation (kBq U-235 eq / ton product)	The exposure to ionising radiation (radioactivity) under normal operating conditions. The potential impact on human health of different ionising radiations is converted to the equivalent of kilobecquerels of Uranium 235 (kg U235 eq).
Sqp	Land use (Pt / ton product)	Use and transformation of land for agriculture, roads, housing, mining or other purposes. The impacts can vary and include loss of species, of the organic matter content of soil, or loss of the soil itself (erosion). This is a composite indicator measuring impacts on four soil properties (biotic production, erosion resistance, groundwater regeneration and mechanical filtration), expressed in points (Pts).
Odp	Ozone depletion (kg CFC11 eq / ton product)	Depletion of the stratospheric ozone (O3) layer which forms the protective barrier from hazardous ultraviolet radiation (UV-B) on earth. The potential impacts of all relevant substances for ozone depletion are converted to their equivalent of kilograms of trichlorofluoromethane (also called Freon-11 and R-11), hence the unit of measurement is in kilogram of CFC-11 equivalent (kg CFC-11 eq).
Pocp	Photochemical ozone formation (kg NMVOC eq / ton product)	Ozone (O3) on the ground (in the troposphere) attacks organic compounds in animals and plants. The potential impact of substances contributing to photochemical ozone formation is converted into the equivalent of kilograms of Non-Methane Volatile Organic Compounds (e.g. alcohols, aromatics, etc.; kg NMVOC eq).

Adpfossil	Resource use, fossils (MJ / ton product)	The availability of resources (fossils) which may impact future availability of these. The amount of materials contributing to resource use, fossils, are converted into MJ.
Adpminerals	Resource use, minerals and metals (kg Sb eq / ton product)	The availability of resources (minerals and metals) which may impact future availability of these. The amount of materials contributing to resource depletion are converted into equivalents of kilograms of antimony (kg Sb eq).
Wdp	Water use (m3 depriv. / ton product)	Availability or scarcity of water in relation to the abstraction of water from lakes, rivers or groundwater used in the process(es). The potential impact is expressed in cubic metres (m3) of water use related to the local scarcity of water.

2.4.2 ReCiPe impact categories

The ReCiPe impact categories and its indicators are listed below in Table 6. More information on these impact categories is available in the [ReCiPe 2016 report](#), table 1.4.

Two additional land use impact categories have been added since GFLI database version 2.2 through the 'Blonk ReCiPe method' in order to clarify land use in two different aspects.

"Land use - Transformation" to show the share of land transformations from the totals and

"Land occupation" to show the land occupation without specific weighting factors and

without land transformations. This is added to specify further the differences in land use.

Table 6 ReCiPe impact categories

Abbreviation	Impact category	Explanation
Gwptotal	Global warming - Including LUC & Peat (kg CO ₂ eq / ton product)	Infra-red radiative forcing increase
GwpExcl	Global warming - Excluding LUC & peat(kg CO ₂ eq / ton product)	
GwpLuc	Global warming - LUC only (kg CO ₂ eq / ton product)	
GwpPeat	Global warming - Peat only (kg CO ₂ eq / ton product)	
Odp	Stratospheric ozone depletion (kg CFC11 eq / ton product)	Stratospheric ozone decreased
Irp	Ionizing radiation (kBq Co-60 eq / ton product)	Absorbed dose increase
Hofp	Ozone formation, Human health (kg NO _x eq / ton product)	Tropospheric ozone population intake increase (M6M)
Pmfp	Fine particulate matter formation (kg PM _{2.5} eq / ton product)	PM _{2.5} population intake increase
Eofp	Ozone formation, Terrestrial ecosystems (kg NO _x eq / ton product)	Tropospheric ozone increase (AOT40)
Tap	Terrestrial acidification (kg SO ₂ eq / ton product)	Proton increase in natural soils
Fep	Freshwater eutrophication (kg P eq / ton product)	Phosphorus increase in fresh water
Mep	Marine eutrophication (kg N eq / ton product)	Nitrogen increase in marine water
Tetp	Terrestrial ecotoxicity (kg 1,4-DCB / ton product)	Hazard weighted increase soils

Fetp	Freshwater ecotoxicity (kg 1,4-DCB / ton product)	Hazard weighted increase fresh waters
Metp	Marine ecotoxicity (kg 1,4-DCB / ton product)	Hazard weighted increase in marine water
Htpc	Human carcinogenic toxicity (kg 1,4-DCB / ton product)	Risk increase of cancer disease incidence
Htpnc	Human non-carcinogenic toxicity (kg 1,4-DCB / ton product)	Risk increase of non-cancer disease incidence
Lutot	Land use - Total (m2a crop eq / ton product)	Occupation and time integrated transformation
Lutr	Land use - Transformation (m2a / ton product)	Share of land transformation from total land use
Lop	Land occupation (m2a / ton product)	Land occupation, excluding weight factors and land transformation
Sop	Mineral resource scarcity (kg Cu eq / ton product) ²	Ore grade decrease
Ffp	Fossil resource scarcity (kg oil eq / ton product) ³	Decrease of fossil resources
Wcp	Water consumption (m3 / ton product)	Increase of water consumed

2.5 Allocation

Allocation is relevant for multifunctional processes, when the product has significant inputs from other product systems or significant outputs to other product systems. The environmental burdens of a multifunctional process need to be shared ([source](#)).

Allocation is the method of allocating emissions to a specific category, for example gross energy within the product or its economic value. The database is separated in three different allocations within the two methods used (ReCiPe and EF). *Please note these only become available in the system once you have licensed the data.*

Information

Economic

Energy

Mass

- Economic:** economic allocation measures the economic value of the main product produced and the by-products that are less economically valuable, for example soy is used to produce soy oil (main economic activity) with its byproduct being soybean hulls and soybean meal.
- Mass:** mass allocation quantifies masses entering and leaving a chemical or physical process. In this case, it is based on the total dry matter sum of the outputs.
- Energy:** the energy content-based allocation is based on a caloric value in MJ per kg.

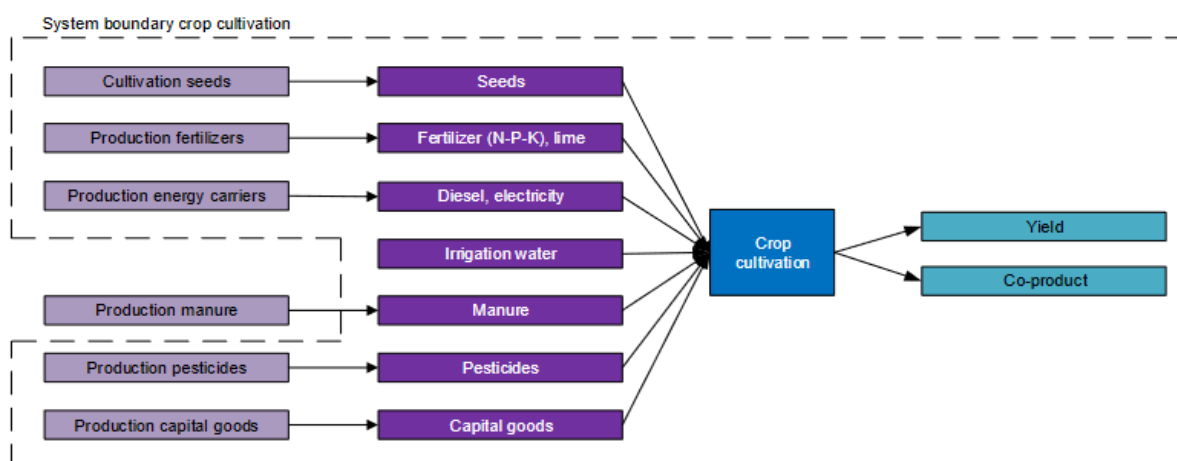
The GFLI allocation methods are according to PEF guidelines (i.e. based on ISO standards but with additional guidance on specific cases and PEFCRs). Which allocation to use is dependent on the user. The European Union's PEF guidelines describes economic allocation as preferred allocation, but there are also possibilities to use other allocation methods which could be useful for doing a sensitivity analysis.

2.6 System boundary

The system boundary of the GFLI database is depending on the named system

- Products "Farm gate": the environmental impact of cultivated feed products until farm gate. Environmental impacts include inputs for cultivation (e.g., energy, fertilizer, lime, pesticides, etc.) and emissions on the farm (e.g., fertilizer use, pesticides, etc.).
- Products "Storage gate": the environmental impact of cultivated feed products, dried, until storage gate. Environmental impacts include inputs for cultivation, and possibly drying technologies and emissions.
- Products "Factory gate": the environmental impact of processed feed materials until processing gate. Environmental impact of processed products includes the impact of cultivation of raw materials, sourcing from different countries, energy and auxiliary material use at processing and waste.

The majority of cultivated ingredients are only available in dried ("Storage gate") conditions, as opposed to fresh ("Farm gate"), with the assumption that most ingredients



are subject to storage and drying (on-farm) before any transport off the farm.

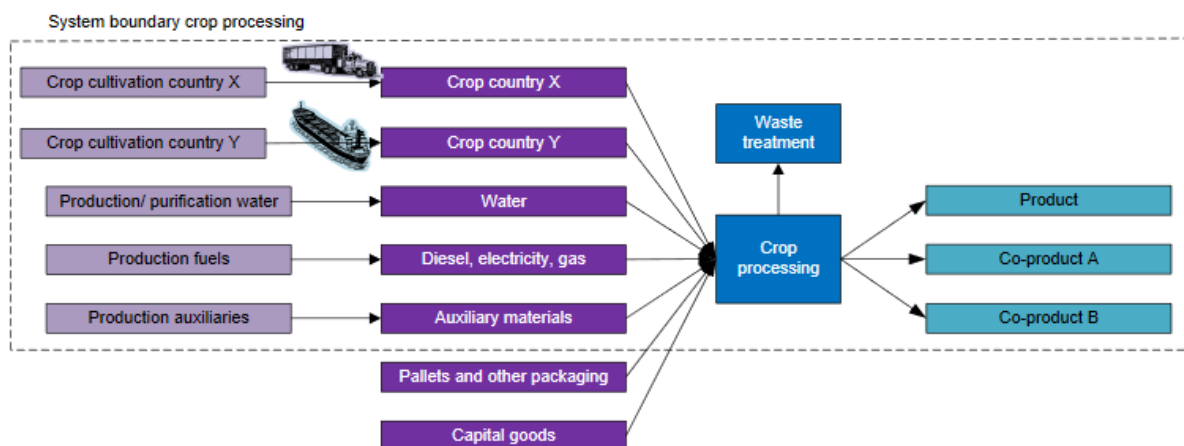
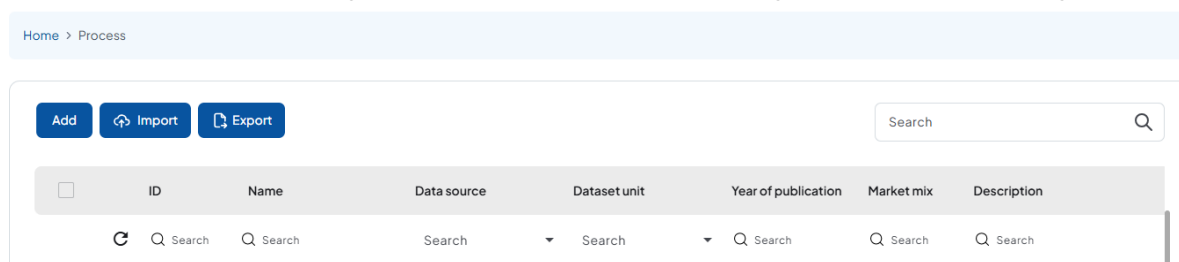


Figure 4 System boundaries of crop cultivation & processing in the GFLI database

2.7 Exporting the PEF-version of the database (Excel)

The database can be exported as Excel file via the blue 'Export' button. It is possible to select all datasets in the grey bar, or select the desired ingredients for exporting.



The exported file contains six tabs. The tab process contains all general information about the datasets: dataset name, source, publication year, nutritional information, DQR scores, market mix and the process description. The following six tabs contain for each allocation type and the EF3.1 and ReCiPe version of the database the unique code of the datasets and the environmental impact values.

Version 4.0, published in September, 2026 contains more specific data on Land Use Change (LUC), using Orbae data. For datasets including the text 'JdLUC Orbae data included' in the process description, Orbae data for at least the economic allocation is available. For these dataset jurisdictional LUC data, equally depreciated is available.

2.8 GHG Protocol/SBTI-FLAG version

The SBTI-FLAG version of the database follows the same format as the PEF version of the database. In this version of the database, Orbae data is available using the linear depreciated approach for LUC calculations. Furthermore, the FLAG-breakdown for the ingredients are available. The FLAG-breakdown data are for each allocation type and for both ReCiPe and EF3.1 available in the additional tabs, viewed as percentages of the total climate change/global warming potential. FLAG-breakdown is divided into 7 columns:

1. Total – % [Orbae jdLUC]
2. NON-FLAG: Emissions (non-land) – % [Orbae jdLUC]
3. FLAG: Crop production (upstream) – % [Orbae jdLUC]
4. FLAG: Land use change emissions – % [Orbae jdLUC]
5. FLAG: Land management non-CO₂ – % [Orbae jdLUC]
6. FLAG: Land management net CO₂ – % [Orbae jdLUC]
7. FLAG: Removals – % [Orbae jdLUC]

The number of datasets including Orbae data available depends on the allocation type:

- Economic allocation: 1,577 datasets
- Energy allocation: 1,599 datasets
- Mass allocation: 1,603 datasets

The SBTI/FLAG version of the database is not yet available via the IT-platform. For access to this version of the database, the GFLI-secretariat must be contacted via info@globalfeedlca.org.

3 Questions and answers

Here are some of the overarching questions the GFLI has received that may be on your mind as well. Please note that the LCIA is the output of the impact assessment method executed on the unit process level data. If you're looking for specific input data used to arrive to this output value, this is only viewable on unit process level data. The only intermediary solution is reading through the process description, which should give some indication of the activities, carriers, and system boundaries included.

Also note that the GFLI does not offer advisory services towards users. Which allocation method or impact assessment method to use should be up to the user, as well as how to deal with data gaps or alternative ingredients use shall be up to the individual user or institutes that form these decisions.

3.1 General questions

Q) What allocation methods is relevant for which use?

The chosen allocation is up to the user and what is most relevant in their case. Allocation distributes the emissions according to the chosen form. Economic allocation distributes it according to economic relevancy (price per kg product), particularly interesting with by-products that typically don't hold a high economic value, which is also the recommended allocation within the EU framework of the PEFCR Feed. Mass is for dry matter per ton of product, and can be relevant for company-specific datasets where change in emissions is measured through dry matter per ton of product. Energy allocation focuses on energy/calorie content (nutritional value of the feed taken into account).

Q) I cannot find the feed ingredient I need in the GFLI database, what should I use instead? When will the missing data be available?

Feed ingredients that have not been sourced on a national level yet, often have a global average (GLO) or European average (RER) in the database. When the feed ingredient you are looking for is missing completely, you could also use the averages per feed ingredient category (e.g. Total minerals, additives, vitamins, at plant/RER Economic S). The GFLI database is dependent on data-in providers for the increase of datasets in the GFLI database.

Q) How is transport accounted for in the GFLI database?

Inbound transport is included from cradle-to-farm or cradle-to-plant. Cultivated ingredients have transport of land management and possible storage transport included. Processed ingredients have transport from farm to the processing facility included. Any

inbound transport beyond this system boundary, as well as the outbound transport (beyond the system boundary to the feed mill, livestock farm, or other regions) should be calculated through own methods.

3.2 Data-specific questions

Q) Why do some ingredients seem to have a higher environmental footprint as by-product than it does as main product? Examples: DDGS vs maize

The GFLI database shares the state of which the ingredient is in, which may make it not directly comparable with another due to some ingredients being dried, while others are fresh.

Q) How come a by-product with low economic value, where the assumption of a cut-off is made (emission from previous processes to be allocated to the main product), how come some still include emissions of peat and land use change?

Most by-products are further processed, where additional carriers or inputs may have been used to stabilize the ingredient's nutritional value and/or preservability. These inputs may be subject to potential land use, and are therefore included. A few ingredients in the GFLI database are currently included as zero-economic-allocation, which are the fresh byproduct's ingredient without any additional processing (sugar beet pulp, wet; cotton seed husks; groundnut shells; safflower seed hulls)

Q) How come the global warming potential (CO₂-equivalent per ton of product) of specific ingredients can differ so much between countries/states/provinces?

Most data currently available in the GFLI database is based on statistical data from renowned sources such as FAOstat, EURstat, or otherwise. Differences may occur due to land management, fertilizer and pesticides use, yields per hectare of ingredients, soil management, or other practices that may reduce productivity or increase amount of inputs for the same amount of yield. Further details of each dataset can be accessed by purchasing access to the system processes and/or unit process level data.

Q) The market mix used in the GFLI database does not reflect the actual origin of imported ingredients my company/processes acquire, what should I do?

There is currently not a method to calculate a market mix specific to each user's import purchases based on the processed ingredients. An alternative option is for the user to base their market mix on cultivated ingredients that are available in the database, and calculate the transport separately to create a specific market mix.

Q) How is transport calculated into the datasets?

Inbound transport is included from cradle-to-farm or cradle-to-plant. Cultivated ingredients have transport of land management and possible storage transport included. Processed ingredients have transport from farm to the processing facility included. Any inbound transport beyond this system boundary, as well as the outbound transport (beyond the system boundary to the feed mill, livestock farm, or other regions) should be calculated through own methods.

Missing answers to the questions you have? Reach out to info@globalfeedlca.org!

Annex 1. Market mix for GFLI database version 4.0

The listing of the market mix, which was previously in the Excel file of the LCIA, is now placed in this document. The variation between the two colours represent each commodity.

Example:

For product Wheat Starch, at processing {GB}, the market mix says 'Wheat – GB'. In the table, you look in column 2 'commodity' Wheat (grain), and then within the wheat section you look through column 1 'market mix for' GB. This results in the following market mix for GB.

Table 7 example of how to read the market mix for GB wheat grain derivatives

GB	Wheat grain	GB	91,32%	91,32%	100,00%
GB	Wheat grain	CA	3,06%	3,06%	100,00%
GB	Wheat grain	FR	1,96%	1,96%	100,00%
GB	Wheat grain	DK	1,83%	1,83%	100,00%
GB	Wheat grain	DE	1,83%	1,83%	100,00%

Within this product, the market mix shows that 91,32% of the raw commodity sourced is from Great Britain itself. 3,06% is sourced from Canada, 1,96% from France, 1,83% from Denmark, and 1,83% from Germany. Currently, the GFLI database cannot distinguish for users who source from specific countries or regions.

Table 8 full list of market mixes used in the GFLI database version 4.0

Market mix for	Commodity	Sourced countries	Origin percentage	Scaled to 100%	Coverage
NL	Barley grain	FR	36,44%	36,44%	100,00%
NL	Barley grain	DE	34,26%	34,26%	100,00%
NL	Barley grain	GB	10,60%	10,60%	100,00%
NL	Barley grain	NL	9,51%	9,51%	100,00%
NL	Barley grain	DK	3,13%	3,13%	100,00%
NL	Barley grain	SE	2,82%	2,82%	100,00%
NL	Barley grain	PL	1,83%	1,83%	100,00%
NL	Barley grain	BE	1,40%	1,40%	100,00%
RER	Barley grain	FR	20,44%	20,75%	98,49%
RER	Barley grain	DE	16,18%	16,43%	98,49%
RER	Barley grain	ES	12,38%	12,57%	98,49%
RER	Barley grain	GB	11,35%	11,52%	98,49%
RER	Barley grain	UA	10,91%	11,08%	98,49%

RER	Barley grain	DK	5,78%	5,87%	98,49%
RER	Barley grain	PL	4,41%	4,48%	98,49%
RER	Barley grain	CZ	2,91%	2,95%	98,49%
RER	Barley grain	HU	2,89%	2,93%	98,49%
RER	Barley grain	RO	2,49%	2,53%	98,49%
RER	Barley grain	SE	2,18%	2,21%	98,49%
RER	Barley grain	IE	1,96%	1,99%	98,49%
RER	Barley grain	FI	1,94%	1,97%	98,49%
RER	Barley grain	IT	1,50%	1,52%	98,49%
RER	Barley grain	AT	1,17%	1,18%	98,49%
NL	Broad beans	GB	62,56%	89,56%	69,85%
NL	Broad beans	DE	5,26%	7,53%	69,85%
NL	Broad beans	FR	2,04%	2,92%	69,85%
NL	Crude palm oil	MY	27,79%	50,53%	54,99%
NL	Crude palm oil	ID	27,20%	49,47%	54,99%
RER	Crude palm oil	ID	46,69%	64,55%	72,33%
RER	Crude palm oil	MY	25,64%	35,45%	72,33%
NL	Crude soybean oil (solvent)	NL	89,77%	92,77%	96,77%
NL	Crude soybean oil (solvent)	DE	5,54%	5,73%	96,77%
NL	Crude soybean oil (solvent)	ES	1,46%	1,51%	96,77%
NL	Groundnuts	CN	33,00%	35,23%	93,67%
NL	Groundnuts	US	27,14%	28,97%	93,67%
NL	Groundnuts	EG	20,05%	21,41%	93,67%
NL	Groundnuts	AR	7,07%	7,55%	93,67%
NL	Groundnuts	IN	5,37%	5,74%	93,67%
NL	Groundnuts	BR	1,04%	1,11%	93,67%
RER	Groundnuts	US	32,99%	36,03%	91,57%
RER	Groundnuts	EG	30,54%	33,35%	91,57%
RER	Groundnuts	CN	23,42%	25,58%	91,57%
RER	Groundnuts	AR	1,97%	2,16%	91,57%
RER	Groundnuts	TR	1,40%	1,53%	91,57%
RER	Groundnuts	IN	1,24%	1,36%	91,57%
BE	Linseed	RU	40,49%	68,95%	58,73%
BE	Linseed	CA	14,14%	24,07%	58,73%
BE	Linseed	UA	1,66%	2,83%	58,73%
BE	Linseed	FR	1,42%	2,42%	58,73%
BE	Linseed	GB	1,02%	1,73%	58,73%
CN	Linseed	CN	42,87%	47,31%	90,61%
CN	Linseed	RU	25,90%	28,58%	90,61%
CN	Linseed	CA	21,86%	24,12%	90,61%
DE	Linseed	RU	29,81%	56,44%	52,82%
DE	Linseed	CA	8,31%	15,74%	52,82%
DE	Linseed	DE	4,99%	9,44%	52,82%
DE	Linseed	FR	4,10%	7,77%	52,82%
DE	Linseed	UA	2,52%	4,78%	52,82%

DE	Linseed	IN	1,60%	3,03%	52,82%
DE	Linseed	GB	1,48%	2,81%	52,82%
NL	Linseed	RU	34,01%	61,63%	55,19%
NL	Linseed	CA	9,06%	16,42%	55,19%
NL	Linseed	IN	3,68%	6,66%	55,19%
NL	Linseed	FR	3,20%	5,80%	55,19%
NL	Linseed	GB	3,12%	5,65%	55,19%
NL	Linseed	UA	2,11%	3,83%	55,19%
US	Linseed	US	46,25%	46,92%	98,57%
US	Linseed	CA	46,24%	46,91%	98,57%
US	Linseed	RU	4,57%	4,63%	98,57%
US	Linseed	IN	1,51%	1,53%	98,57%
BE	Maize	FR	38,31%	38,31%	100,00%
BE	Maize	UA	32,48%	32,48%	100,00%
BE	Maize	BE	18,77%	18,77%	100,00%
BE	Maize	RO	2,38%	2,38%	100,00%
BE	Maize	PL	1,95%	1,95%	100,00%
BE	Maize	DE	1,90%	1,90%	100,00%
BE	Maize	BR	1,64%	1,64%	100,00%
BE	Maize	HU	1,32%	1,32%	100,00%
BE	Maize	BG	1,26%	1,26%	100,00%
BR	Maize	BR	98,49%	100,00%	98,49%
CN	Maize	CN	95,24%	95,24%	100,00%
CN	Maize	US	2,84%	2,84%	100,00%
CN	Maize	UA	1,93%	1,93%	100,00%
DE	Maize	DE	53,43%	53,43%	100,00%
DE	Maize	PL	13,87%	13,87%	100,00%
DE	Maize	UA	12,84%	12,84%	100,00%
DE	Maize	HU	7,07%	7,07%	100,00%
DE	Maize	FR	7,01%	7,01%	100,00%
DE	Maize	RO	2,78%	2,78%	100,00%
DE	Maize	SK	1,55%	1,55%	100,00%
DE	Maize	CZ	1,46%	1,46%	100,00%
JP	Maize	BR	21,41%	21,41%	100,00%
JP	Maize	AR	3,23%	3,23%	100,00%
JP	Maize	ZA	2,48%	2,48%	100,00%
NL	Maize	UA	51,84%	51,84%	100,00%
NL	Maize	FR	16,59%	16,59%	100,00%
NL	Maize	BR	9,07%	9,07%	100,00%
NL	Maize	RO	7,91%	7,91%	100,00%
NL	Maize	DE	3,62%	3,62%	100,00%
NL	Maize	PL	3,56%	3,56%	100,00%
NL	Maize	NL	2,66%	2,66%	100,00%
NL	Maize	US	1,78%	1,78%	100,00%
NL	Maize	BG	1,74%	1,74%	100,00%

NL	Maize	HU	1,25%	1,25%	100,00%
PL	Maize	PL	92,13%	92,13%	100,00%
PL	Maize	UA	6,60%	6,60%	100,00%
PL	Maize	SK	1,27%	1,27%	100,00%
RER	Maize	UA	33,13%	36,52%	90,72%
RER	Maize	FR	12,56%	13,85%	90,72%
RER	Maize	RO	11,85%	13,06%	90,72%
RER	Maize	HU	7,01%	7,72%	90,72%
RER	Maize	PL	5,57%	6,14%	90,72%
RER	Maize	IT	4,26%	4,70%	90,72%
RER	Maize	BR	3,70%	4,08%	90,72%
RER	Maize	BG	3,39%	3,73%	90,72%
RER	Maize	DE	3,13%	3,45%	90,72%
RER	Maize	ES	2,91%	3,21%	90,72%
RER	Maize	AT	1,91%	2,10%	90,72%
RER	Maize	SK	1,31%	1,45%	90,72%
TH	Maize	TH	82,41%	100,00%	82,41%
BE	Oat grain	SE	21,08%	21,08%	100,00%
BE	Oat grain	FI	20,47%	20,47%	100,00%
BE	Oat grain	FR	15,54%	15,54%	100,00%
BE	Oat grain	GB	14,27%	14,27%	100,00%
BE	Oat grain	BE	10,57%	10,57%	100,00%
BE	Oat grain	EE	6,53%	6,53%	100,00%
BE	Oat grain	LV	3,70%	3,70%	100,00%
BE	Oat grain	LT	2,24%	2,24%	100,00%
BE	Oat grain	PL	2,20%	2,20%	100,00%
BE	Oat grain	IE	2,18%	2,18%	100,00%
BE	Oat grain	ES	1,21%	1,21%	100,00%
NL	Oat grain	PL	34,61%	34,61%	100,00%
NL	Oat grain	FI	13,83%	13,83%	100,00%
NL	Oat grain	GB	12,19%	12,19%	100,00%
NL	Oat grain	FR	10,19%	10,19%	100,00%
NL	Oat grain	DE	6,93%	6,93%	100,00%
NL	Oat grain	SE	5,67%	5,67%	100,00%
NL	Oat grain	NL	3,46%	3,46%	100,00%
NL	Oat grain	LT	3,06%	3,06%	100,00%
NL	Oat grain	LV	3,03%	3,03%	100,00%
NL	Oat grain	EE	3,02%	3,02%	100,00%
NL	Oat grain	BE	1,85%	1,85%	100,00%
NL	Oat grain	ES	1,09%	1,09%	100,00%
NL	Oat grain	DK	1,08%	1,08%	100,00%
RER	Oat grain	PL	15,25%	15,25%	100,00%
RER	Oat grain	FI	13,31%	13,31%	100,00%
RER	Oat grain	ES	11,43%	11,43%	100,00%
RER	Oat grain	GB	10,85%	10,85%	100,00%

RER	Oat grain	SE	7,61%	7,61%	100,00%
RER	Oat grain	DE	6,74%	6,74%	100,00%
RER	Oat grain	FR	4,95%	4,95%	100,00%
RER	Oat grain	UA	4,22%	4,22%	100,00%
RER	Oat grain	DK	3,71%	3,71%	100,00%
RER	Oat grain	BY	3,55%	3,55%	100,00%
RER	Oat grain	LT	2,66%	2,66%	100,00%
RER	Oat grain	LV	2,64%	2,64%	100,00%
RER	Oat grain	RO	2,55%	2,55%	100,00%
RER	Oat grain	NO	2,42%	2,42%	100,00%
RER	Oat grain	IT	2,41%	2,41%	100,00%
RER	Oat grain	IE	2,19%	2,19%	100,00%
RER	Oat grain	CZ	2,05%	2,05%	100,00%
RER	Oat grain	EE	1,47%	1,47%	100,00%
NL	Peas	FR	26,99%	26,99%	100,00%
NL	Peas	RU	21,21%	21,21%	100,00%
NL	Peas	LT	20,10%	20,10%	100,00%
NL	Peas	DE	6,76%	6,76%	100,00%
NL	Peas	UA	6,14%	6,14%	100,00%
NL	Peas	GB	3,58%	3,58%	100,00%
NL	Peas	LV	3,23%	3,23%	100,00%
NL	Peas	CA	2,87%	2,87%	100,00%
NL	Peas	EE	2,51%	2,51%	100,00%
NL	Peas	PL	2,24%	2,24%	100,00%
NL	Peas	RO	1,60%	1,60%	100,00%
NL	Peas	CZ	1,42%	1,42%	100,00%
NL	Peas	AU	1,36%	1,36%	100,00%
RER	Peas	FR	20,81%	21,27%	97,84%
RER	Peas	UA	18,21%	18,61%	97,84%
RER	Peas	RU	11,01%	11,25%	97,84%
RER	Peas	DE	7,70%	7,87%	97,84%
RER	Peas	LT	7,37%	7,53%	97,84%
RER	Peas	ES	5,25%	5,37%	97,84%
RER	Peas	RO	4,90%	5,01%	97,84%
RER	Peas	GB	4,52%	4,62%	97,84%
RER	Peas	EE	3,45%	3,52%	97,84%
RER	Peas	CZ	3,25%	3,32%	97,84%
RER	Peas	SE	2,28%	2,33%	97,84%
RER	Peas	PL	1,58%	1,62%	97,84%
RER	Peas	IT	1,49%	1,52%	97,84%
RER	Peas	LV	1,35%	1,38%	97,84%
RER	Peas	FI	1,29%	1,32%	97,84%
RER	Peas	DK	1,16%	1,19%	97,84%
RER	Peas	BG	1,12%	1,15%	97,84%
RER	Peas	HU	1,11%	1,14%	97,84%

DE	Potatoes	DE	96,54%	96,54%	100,00%
DE	Potatoes	NL	2,30%	2,30%	100,00%
DE	Potatoes	FR	1,15%	1,15%	100,00%
NL	Potatoes	NL	80,96%	80,96%	100,00%
NL	Potatoes	DE	13,03%	13,03%	100,00%
NL	Potatoes	FR	3,55%	3,55%	100,00%
NL	Potatoes	BE	2,46%	2,46%	100,00%
RER	Potatoes	UA	25,39%	25,39%	100,00%
RER	Potatoes	DE	15,94%	15,94%	100,00%
RER	Potatoes	FR	14,37%	14,37%	100,00%
RER	Potatoes	NL	9,72%	9,72%	100,00%
RER	Potatoes	PL	8,41%	8,41%	100,00%
RER	Potatoes	GB	6,48%	6,48%	100,00%
RER	Potatoes	BE	4,95%	4,95%	100,00%
RER	Potatoes	BY	4,82%	4,82%	100,00%
RER	Potatoes	DK	3,01%	3,01%	100,00%
RER	Potatoes	ES	2,78%	2,78%	100,00%
RER	Potatoes	RO	2,43%	2,43%	100,00%
RER	Potatoes	IT	1,69%	1,69%	100,00%
NL	Potatoes	NL	80,96%	80,96%	100,00%
NL	Potatoes	DE	13,03%	13,03%	100,00%
NL	Potatoes	FR	3,55%	3,55%	100,00%
NL	Potatoes	BE	2,46%	2,46%	100,00%
AT	Rapeseed	HU	49,98%	52,84%	94,58%
AT	Rapeseed	AT	25,94%	27,43%	94,58%
AT	Rapeseed	SK	10,48%	11,08%	94,58%
AT	Rapeseed	RO	3,46%	3,66%	94,58%
AT	Rapeseed	UA	3,17%	3,35%	94,58%
AT	Rapeseed	DE	1,56%	1,65%	94,58%
BE	Rapeseed	AU	32,44%	32,44%	100,00%
BE	Rapeseed	UA	28,83%	28,83%	100,00%
BE	Rapeseed	RO	10,76%	10,76%	100,00%
BE	Rapeseed	CA	9,13%	9,13%	100,00%
BE	Rapeseed	FR	8,05%	8,05%	100,00%
BE	Rapeseed	BG	6,49%	6,49%	100,00%
BE	Rapeseed	LT	2,72%	2,72%	100,00%
BE	Rapeseed	BE	1,58%	1,58%	100,00%
BR	Rapeseed	BR	97,26%	100,00%	97,26%
CN	Rapeseed	CN	83,32%	83,32%	100,00%
CN	Rapeseed	CA	15,65%	15,65%	100,00%
CN	Rapeseed	RU	1,04%	1,04%	100,00%
CZ	Rapeseed	CZ	83,28%	83,28%	100,00%
CZ	Rapeseed	SK	5,47%	5,47%	100,00%
CZ	Rapeseed	RO	4,83%	4,83%	100,00%
CZ	Rapeseed	HU	2,90%	2,90%	100,00%

CZ	Rapeseed	PL	2,05%	2,05%	100,00%
CZ	Rapeseed	UA	1,46%	1,46%	100,00%
DE	Rapeseed	DE	40,88%	40,88%	100,00%
DE	Rapeseed	UA	11,93%	11,93%	100,00%
DE	Rapeseed	AU	11,87%	11,87%	100,00%
DE	Rapeseed	FR	9,63%	9,63%	100,00%
DE	Rapeseed	RO	5,38%	5,38%	100,00%
DE	Rapeseed	CA	4,69%	4,69%	100,00%
DE	Rapeseed	HU	4,19%	4,19%	100,00%
DE	Rapeseed	PL	3,12%	3,12%	100,00%
DE	Rapeseed	CZ	2,80%	2,80%	100,00%
DE	Rapeseed	LT	2,42%	2,42%	100,00%
DE	Rapeseed	BG	2,03%	2,03%	100,00%
DE	Rapeseed	LV	1,06%	1,06%	100,00%
DK	Rapeseed	DK	87,38%	87,38%	100,00%
DK	Rapeseed	LT	4,02%	4,02%	100,00%
DK	Rapeseed	AU	2,27%	2,27%	100,00%
DK	Rapeseed	LV	2,25%	2,25%	100,00%
DK	Rapeseed	SE	1,72%	1,72%	100,00%
DK	Rapeseed	FR	1,25%	1,25%	100,00%
DK	Rapeseed	DE	1,11%	1,11%	100,00%
ES	Rapeseed	ES	75,60%	75,60%	100,00%
ES	Rapeseed	FR	10,53%	10,53%	100,00%
ES	Rapeseed	RO	3,61%	3,61%	100,00%
ES	Rapeseed	UA	3,03%	3,03%	100,00%
ES	Rapeseed	CA	2,58%	2,58%	100,00%
ES	Rapeseed	AU	2,36%	2,36%	100,00%
ES	Rapeseed	DE	2,29%	2,29%	100,00%
FR	Rapeseed	FR	76,24%	76,24%	100,00%
FR	Rapeseed	CA	12,05%	12,05%	100,00%
FR	Rapeseed	AU	5,91%	5,91%	100,00%
FR	Rapeseed	UA	5,80%	5,80%	100,00%
GB	Rapeseed	GB	74,53%	76,86%	96,97%
GB	Rapeseed	UA	8,96%	9,24%	96,97%
GB	Rapeseed	LT	3,60%	3,71%	96,97%
GB	Rapeseed	AU	3,50%	3,61%	96,97%
GB	Rapeseed	FR	3,35%	3,45%	96,97%
GB	Rapeseed	IE	1,62%	1,67%	96,97%
GB	Rapeseed	LV	1,41%	1,46%	96,97%
HU	Rapeseed	HU	89,92%	93,40%	96,27%
HU	Rapeseed	RO	3,86%	4,01%	96,27%
HU	Rapeseed	UA	2,49%	2,59%	96,27%
IT	Rapeseed	IT	69,71%	79,79%	87,37%
IT	Rapeseed	RO	10,41%	11,92%	87,37%
IT	Rapeseed	SI	2,88%	3,30%	87,37%

IT	Rapeseed	UA	2,35%	2,69%	87,37%
IT	Rapeseed	HU	2,00%	2,29%	87,37%
JP	Rapeseed	CA	87,24%	87,24%	100,00%
JP	Rapeseed	AU	12,76%	12,76%	100,00%
NL	Rapeseed	UA	37,69%	37,69%	100,00%
NL	Rapeseed	AU	25,52%	25,52%	100,00%
NL	Rapeseed	RO	11,63%	11,63%	100,00%
NL	Rapeseed	CA	7,97%	7,97%	100,00%
NL	Rapeseed	LT	6,24%	6,24%	100,00%
NL	Rapeseed	BG	6,17%	6,17%	100,00%
NL	Rapeseed	FR	2,48%	2,48%	100,00%
NL	Rapeseed	LV	2,29%	2,29%	100,00%
PL	Rapeseed	PL	84,12%	84,12%	100,00%
PL	Rapeseed	UA	7,20%	7,20%	100,00%
PL	Rapeseed	CZ	3,37%	3,37%	100,00%
PL	Rapeseed	SK	2,13%	2,13%	100,00%
PL	Rapeseed	RO	1,98%	1,98%	100,00%
PL	Rapeseed	HU	1,21%	1,21%	100,00%
RER	Rapeseed	UA	18,01%	18,01%	100,00%
RER	Rapeseed	FR	14,95%	14,95%	100,00%
RER	Rapeseed	DE	10,75%	10,75%	100,00%
RER	Rapeseed	PL	9,08%	9,08%	100,00%
RER	Rapeseed	AU	7,57%	7,57%	100,00%
RER	Rapeseed	RO	6,77%	6,77%	100,00%
RER	Rapeseed	CZ	4,56%	4,56%	100,00%
RER	Rapeseed	GB	4,38%	4,38%	100,00%
RER	Rapeseed	HU	4,34%	4,34%	100,00%
RER	Rapeseed	CA	4,18%	4,18%	100,00%
RER	Rapeseed	LT	4,09%	4,09%	100,00%
RER	Rapeseed	BG	2,39%	2,39%	100,00%
RER	Rapeseed	DK	2,13%	2,13%	100,00%
RER	Rapeseed	SK	2,02%	2,02%	100,00%
RER	Rapeseed	BY	1,91%	1,91%	100,00%
RER	Rapeseed	LV	1,79%	1,79%	100,00%
RER	Rapeseed	SE	1,09%	1,09%	100,00%
US	Rapeseed	US	74,95%	74,95%	100,00%
US	Rapeseed	CA	23,99%	23,99%	100,00%
US	Rapeseed	AR	1,06%	1,06%	100,00%
ES	Rice	ES	56,09%	68,23%	82,20%
ES	Rice	MM	6,95%	8,46%	82,20%
ES	Rice	AR	5,52%	6,72%	82,20%
ES	Rice	PK	4,51%	5,48%	82,20%
ES	Rice	TH	2,52%	3,06%	82,20%
ES	Rice	IT	2,12%	2,57%	82,20%
ES	Rice	KH	1,94%	2,36%	82,20%

ES	Rice	UY	1,60%	1,95%	82,20%
ES	Rice	IN	0,96%	1,17%	82,20%
IT	Rice	IT	71,12%	84,18%	84,48%
IT	Rice	PK	5,92%	7,01%	84,48%
IT	Rice	MM	2,95%	3,49%	84,48%
IT	Rice	TH	1,85%	2,19%	84,48%
IT	Rice	IN	1,71%	2,03%	84,48%
IT	Rice	KH	0,93%	1,10%	84,48%
NL	Rice	PK	17,65%	19,52%	90,41%
NL	Rice	IN	17,14%	18,96%	90,41%
NL	Rice	MM	13,69%	15,14%	90,41%
NL	Rice	TH	10,96%	12,12%	90,41%
NL	Rice	KH	8,01%	8,86%	90,41%
NL	Rice	IT	7,45%	8,24%	90,41%
NL	Rice	ES	4,26%	4,72%	90,41%
NL	Rice	AR	3,30%	3,65%	90,41%
NL	Rice	UY	2,72%	3,01%	90,41%
NL	Rice	VN	2,23%	2,47%	90,41%
NL	Rice	BR	1,65%	1,83%	90,41%
NL	Rice	US	1,35%	1,49%	90,41%
BE	Rye grain	DE	44,93%	45,60%	98,52%
BE	Rye grain	FR	14,46%	14,68%	98,52%
BE	Rye grain	BE	13,45%	13,65%	98,52%
BE	Rye grain	PL	13,35%	13,55%	98,52%
BE	Rye grain	LV	6,70%	6,80%	98,52%
BE	Rye grain	LT	5,64%	5,73%	98,52%
DE	Rye grain	DE	86,95%	86,95%	100,00%
DE	Rye grain	PL	13,05%	13,05%	100,00%
NL	Rye grain	DE	65,14%	65,14%	100,00%
NL	Rye grain	PL	24,75%	24,75%	100,00%
NL	Rye grain	FR	3,46%	3,46%	100,00%
NL	Rye grain	NL	3,34%	3,34%	100,00%
NL	Rye grain	RU	1,70%	1,70%	100,00%
NL	Rye grain	LT	1,61%	1,61%	100,00%
RER	Rye grain	DE	32,62%	32,62%	100,00%
RER	Rye grain	PL	31,02%	31,02%	100,00%
RER	Rye grain	BY	7,93%	7,93%	100,00%
RER	Rye grain	DK	7,03%	7,03%	100,00%
RER	Rye grain	UA	4,74%	4,74%	100,00%
RER	Rye grain	ES	3,29%	3,29%	100,00%
RER	Rye grain	LV	2,31%	2,31%	100,00%
RER	Rye grain	AT	1,98%	1,98%	100,00%
RER	Rye grain	FR	1,78%	1,78%	100,00%
RER	Rye grain	CZ	1,73%	1,73%	100,00%
RER	Rye grain	SE	1,65%	1,65%	100,00%

RER	Rye grain	GB	1,40%	1,40%	100,00%
RER	Rye grain	RU	1,33%	1,33%	100,00%
RER	Rye grain	LT	1,21%	1,21%	100,00%
NL	Safflower seed	RU	90,89%	90,89%	100,00%
NL	Safflower seed	US	9,11%	9,11%	100,00%
US	Safflower seed	US	96,62%	96,62%	100,00%
US	Safflower seed	RU	3,38%	3,38%	100,00%
NL	Sesame seed	IN	33,09%	76,20%	43,43%
NL	Sesame seed	MX	6,96%	16,02%	43,43%
NL	Sesame seed	PK	3,38%	7,79%	43,43%
AR	Soybeans	AR	92,47%	92,47%	100,00%
AR	Soybeans	PY	7,53%	7,53%	100,00%
BE	Soybeans	BR	40,05%	40,67%	98,47%
BE	Soybeans	CA	30,80%	31,28%	98,47%
BE	Soybeans	US	21,29%	21,62%	98,47%
BE	Soybeans	FR	4,27%	4,33%	98,47%
BE	Soybeans	IN	2,07%	2,10%	98,47%
CN	Soybeans	BR	55,31%	56,10%	98,59%
CN	Soybeans	US	22,39%	22,71%	98,59%
CN	Soybeans	CN	16,64%	16,88%	98,59%
CN	Soybeans	AR	4,25%	4,31%	98,59%
DE	Soybeans	US	56,45%	56,45%	100,00%
DE	Soybeans	BR	31,79%	31,79%	100,00%
DE	Soybeans	CA	4,44%	4,44%	100,00%
DE	Soybeans	UA	3,39%	3,39%	100,00%
DE	Soybeans	DE	2,61%	2,61%	100,00%
DE	Soybeans	AT	1,33%	1,33%	100,00%
ES	Soybeans	BR	62,32%	62,32%	100,00%
ES	Soybeans	US	33,63%	33,63%	100,00%
ES	Soybeans	CA	2,76%	2,76%	100,00%
ES	Soybeans	UA	1,29%	1,29%	100,00%
FR	Soybeans	FR	42,74%	44,07%	96,99%
FR	Soybeans	BR	29,42%	30,33%	96,99%
FR	Soybeans	US	18,00%	18,56%	96,99%
FR	Soybeans	CA	4,50%	4,64%	96,99%
FR	Soybeans	UA	2,32%	2,39%	96,99%
GB	Soybeans	BR	58,95%	58,95%	100,00%
GB	Soybeans	US	26,97%	26,97%	100,00%
GB	Soybeans	CA	14,08%	14,08%	100,00%
IT	Soybeans	IT	33,55%	34,26%	97,93%
IT	Soybeans	BR	29,68%	30,31%	97,93%
IT	Soybeans	US	17,66%	18,03%	97,93%
IT	Soybeans	CA	10,71%	10,94%	97,93%
IT	Soybeans	UA	4,52%	4,62%	97,93%
IT	Soybeans	PY	1,81%	1,85%	97,93%

JP	Soybeans	US	69,97%	69,97%	100,00%
JP	Soybeans	BR	15,39%	15,39%	100,00%
JP	Soybeans	CA	8,18%	8,18%	100,00%
JP	Soybeans	JP	6,46%	6,46%	100,00%
NL	Soybeans	BR	45,39%	46,19%	98,26%
NL	Soybeans	US	45,03%	45,83%	98,26%
NL	Soybeans	CA	5,47%	5,57%	98,26%
NL	Soybeans	UA	2,37%	2,41%	98,26%
PT	Soybeans	BR	50,87%	50,87%	100,00%
PT	Soybeans	US	40,18%	40,18%	100,00%
PT	Soybeans	CA	5,94%	5,94%	100,00%
PT	Soybeans	PY	3,01%	3,01%	100,00%
RER	Soybeans	BR	33,81%	35,41%	95,49%
RER	Soybeans	US	27,78%	29,09%	95,49%
RER	Soybeans	UA	18,95%	19,85%	95,49%
RER	Soybeans	CA	5,53%	5,79%	95,49%
RER	Soybeans	IT	4,33%	4,54%	95,49%
RER	Soybeans	FR	1,95%	2,04%	95,49%
RER	Soybeans	RO	1,90%	1,99%	95,49%
RER	Soybeans	AT	1,25%	1,31%	95,49%
BE	Sugar beet pulp dried	BE	55,86%	93,25%	59,90%
BE	Sugar beet pulp dried	NL	2,65%	4,42%	59,90%
BE	Sugar beet pulp dried	DE	1,39%	2,33%	59,90%
NL	Sugar beet pulp dried	NL	79,05%	84,68%	93,35%
NL	Sugar beet pulp dried	DE	14,30%	15,32%	93,35%
RER	Sugar beet	FR	26,19%	26,62%	98,40%
RER	Sugar beet	DE	22,55%	22,92%	98,40%
RER	Sugar beet	PL	11,21%	11,39%	98,40%
RER	Sugar beet	UA	8,34%	8,47%	98,40%
RER	Sugar beet	GB	5,35%	5,44%	98,40%
RER	Sugar beet	NL	5,20%	5,29%	98,40%
RER	Sugar beet	BE	3,78%	3,84%	98,40%
RER	Sugar beet	BY	3,37%	3,42%	98,40%
RER	Sugar beet	CZ	2,97%	3,02%	98,40%
RER	Sugar beet	ES	1,94%	1,97%	98,40%
RER	Sugar beet	AT	1,85%	1,88%	98,40%
RER	Sugar beet	DK	1,83%	1,86%	98,40%
RER	Sugar beet	SE	1,49%	1,52%	98,40%
RER	Sugar beet	IT	1,26%	1,28%	98,40%
RER	Sugar beet	SK	1,07%	1,09%	98,40%
BG	Sunflower seed	BG	72,96%	75,16%	97,07%
BG	Sunflower seed	RO	11,66%	12,01%	97,07%
BG	Sunflower seed	UA	9,26%	9,54%	97,07%
BG	Sunflower seed	RU	3,20%	3,30%	97,07%
BR	Sunflower seed	BR	91,97%	91,97%	100,00%

BR	Sunflower seed	AR	6,81%	6,81%	100,00%
BR	Sunflower seed	BG	1,22%	1,22%	100,00%
CN	Sunflower seed	CN	94,22%	98,80%	95,36%
CN	Sunflower seed	RU	1,14%	1,20%	95,36%
DE	Sunflower seed	HU	19,01%	19,64%	96,81%
DE	Sunflower seed	DE	17,90%	18,49%	96,81%
DE	Sunflower seed	BG	16,72%	17,27%	96,81%
DE	Sunflower seed	FR	14,58%	15,06%	96,81%
DE	Sunflower seed	RO	14,40%	14,87%	96,81%
DE	Sunflower seed	SK	5,07%	5,24%	96,81%
DE	Sunflower seed	UA	4,06%	4,19%	96,81%
DE	Sunflower seed	CN	1,32%	1,36%	96,81%
DE	Sunflower seed	RU	1,32%	1,36%	96,81%
DE	Sunflower seed	AT	1,31%	1,35%	96,81%
DE	Sunflower seed	TR	1,13%	1,16%	96,81%
ES	Sunflower seed	ES	67,49%	67,49%	100,00%
ES	Sunflower seed	FR	13,50%	13,50%	100,00%
ES	Sunflower seed	RO	11,03%	11,03%	100,00%
ES	Sunflower seed	BG	2,26%	2,26%	100,00%
ES	Sunflower seed	AR	2,22%	2,22%	100,00%
ES	Sunflower seed	UA	1,85%	1,85%	100,00%
ES	Sunflower seed	CN	1,65%	1,65%	100,00%
FR	Sunflower seed	FR	88,43%	88,43%	100,00%
FR	Sunflower seed	RO	7,95%	7,95%	100,00%
FR	Sunflower seed	BG	1,43%	1,43%	100,00%
FR	Sunflower seed	AR	1,12%	1,12%	100,00%
FR	Sunflower seed	UA	1,07%	1,07%	100,00%
HU	Sunflower seed	HU	88,87%	89,80%	98,96%
HU	Sunflower seed	RO	6,15%	6,22%	98,96%
HU	Sunflower seed	UA	3,94%	3,98%	98,96%
IT	Sunflower seed	IT	62,32%	65,43%	95,25%
IT	Sunflower seed	HU	13,62%	14,30%	95,25%
IT	Sunflower seed	RO	9,76%	10,25%	95,25%
IT	Sunflower seed	GR	3,65%	3,83%	95,25%
IT	Sunflower seed	BG	2,75%	2,89%	95,25%
IT	Sunflower seed	UA	1,77%	1,86%	95,25%
IT	Sunflower seed	RU	1,38%	1,45%	95,25%
JP	Sunflower seed	CA	21,20%	21,20%	100,00%
JP	Sunflower seed	US	20,34%	20,34%	100,00%
JP	Sunflower seed	IN	18,80%	18,80%	100,00%
JP	Sunflower seed	CN	10,04%	10,04%	100,00%
JP	Sunflower seed	BG	9,46%	9,46%	100,00%
JP	Sunflower seed	AR	6,69%	6,69%	100,00%
JP	Sunflower seed	RU	5,94%	5,94%	100,00%
JP	Sunflower seed	HU	2,67%	2,67%	100,00%

JP	Sunflower seed	RO	2,01%	2,01%	100,00%
JP	Sunflower seed	UA	1,60%	1,60%	100,00%
JP	Sunflower seed	CL	1,27%	1,27%	100,00%
NL	Sunflower seed	RO	51,50%	54,04%	95,30%
NL	Sunflower seed	BG	20,07%	21,06%	95,30%
NL	Sunflower seed	FR	6,45%	6,77%	95,30%
NL	Sunflower seed	HU	5,97%	6,26%	95,30%
NL	Sunflower seed	RU	5,02%	5,27%	95,30%
NL	Sunflower seed	UA	4,35%	4,56%	95,30%
NL	Sunflower seed	SK	1,94%	2,03%	95,30%
RER	Sunflower seed	UA	51,56%	55,22%	93,38%
RER	Sunflower seed	RO	14,64%	15,68%	93,38%
RER	Sunflower seed	BG	8,52%	9,13%	93,38%
RER	Sunflower seed	HU	7,29%	7,81%	93,38%
RER	Sunflower seed	FR	7,02%	7,52%	93,38%
RER	Sunflower seed	ES	3,09%	3,31%	93,38%
RER	Sunflower seed	SK	1,25%	1,34%	93,38%
RO	Sunflower seed	RO	89,85%	94,58%	95,00%
RO	Sunflower seed	UA	2,69%	2,84%	95,00%
RO	Sunflower seed	HU	1,23%	1,30%	95,00%
RO	Sunflower seed	BG	1,22%	1,29%	95,00%
TR	Sunflower seed	TR	71,71%	77,12%	92,98%
TR	Sunflower seed	RU	6,60%	7,10%	92,98%
TR	Sunflower seed	RO	5,13%	5,51%	92,98%
TR	Sunflower seed	UA	4,80%	5,17%	92,98%
TR	Sunflower seed	BG	2,43%	2,61%	92,98%
TR	Sunflower seed	CN	2,32%	2,49%	92,98%
US	Sunflower seed	US	93,14%	93,14%	100,00%
US	Sunflower seed	BG	3,20%	3,20%	100,00%
US	Sunflower seed	CA	2,04%	2,04%	100,00%
US	Sunflower seed	AR	1,62%	1,62%	100,00%
US	Sweet potatoes	US	98,69%	98,69%	100,00%
US	Sweet potatoes	CN	1,31%	1,31%	100,00%
RER	Triticale grain	PL	43,71%	43,71%	100,00%
RER	Triticale grain	DE	16,43%	16,43%	100,00%
RER	Triticale grain	FR	12,45%	12,45%	100,00%
RER	Triticale grain	BY	9,57%	9,57%	100,00%
RER	Triticale grain	ES	5,58%	5,58%	100,00%
RER	Triticale grain	LT	2,59%	2,59%	100,00%
RER	Triticale grain	AT	2,39%	2,39%	100,00%
RER	Triticale grain	HU	2,33%	2,33%	100,00%
RER	Triticale grain	RO	2,14%	2,14%	100,00%
RER	Triticale grain	CZ	1,65%	1,65%	100,00%
RER	Triticale grain	SE	1,17%	1,17%	100,00%
BE	Wheat grain	FR	50,78%	50,78%	100,00%

BE	Wheat grain	BE	31,71%	31,71%	100,00%
BE	Wheat grain	DE	14,27%	14,27%	100,00%
BE	Wheat grain	CA	2,11%	2,11%	100,00%
BE	Wheat grain	CZ	1,13%	1,13%	100,00%
BR	Wheat grain	BR	53,58%	55,78%	96,05%
BR	Wheat grain	AR	38,76%	40,35%	96,05%
BR	Wheat grain	US	2,68%	2,79%	96,05%
BR	Wheat grain	RU	1,04%	1,08%	96,05%
CN	Wheat grain	CN	97,10%	97,10%	100,00%
CN	Wheat grain	AU	1,49%	1,49%	100,00%
CN	Wheat grain	CA	1,42%	1,42%	100,00%
DE	Wheat grain	DE	88,47%	88,47%	100,00%
DE	Wheat grain	CZ	6,71%	6,71%	100,00%
DE	Wheat grain	PL	2,81%	2,81%	100,00%
DE	Wheat grain	FR	2,02%	2,02%	100,00%
DK	Wheat grain	DK	96,95%	96,95%	100,00%
DK	Wheat grain	SE	1,62%	1,62%	100,00%
DK	Wheat grain	DE	1,43%	1,43%	100,00%
ES	Wheat grain	ES	62,14%	62,14%	100,00%
ES	Wheat grain	FR	11,62%	11,62%	100,00%
ES	Wheat grain	BG	6,19%	6,19%	100,00%
ES	Wheat grain	UA	4,98%	4,98%	100,00%
ES	Wheat grain	LT	3,08%	3,08%	100,00%
ES	Wheat grain	RO	2,99%	2,99%	100,00%
ES	Wheat grain	DK	1,63%	1,63%	100,00%
ES	Wheat grain	CA	1,39%	1,39%	100,00%
ES	Wheat grain	DE	1,28%	1,28%	100,00%
ES	Wheat grain	SE	1,23%	1,23%	100,00%
ES	Wheat grain	GB	1,23%	1,23%	100,00%
ES	Wheat grain	LV	1,16%	1,16%	100,00%
ES	Wheat grain	PL	1,08%	1,08%	100,00%
GB	Wheat grain	GB	91,32%	91,32%	100,00%
GB	Wheat grain	CA	3,06%	3,06%	100,00%
GB	Wheat grain	FR	1,96%	1,96%	100,00%
GB	Wheat grain	DK	1,83%	1,83%	100,00%
GB	Wheat grain	DE	1,83%	1,83%	100,00%
HU	Wheat grain	HU	97,47%	97,47%	100,00%
HU	Wheat grain	SK	2,53%	2,53%	100,00%
IE	Wheat grain	IE	68,82%	68,82%	100,00%
IE	Wheat grain	GB	16,81%	16,81%	100,00%
IE	Wheat grain	FR	6,54%	6,54%	100,00%
IE	Wheat grain	DK	4,44%	4,44%	100,00%
IE	Wheat grain	BG	1,72%	1,72%	100,00%
IE	Wheat grain	SE	1,68%	1,68%	100,00%
IT	Wheat grain	IT	50,32%	52,14%	96,51%

IT	Wheat grain	HU	9,65%	10,00%	96,51%
IT	Wheat grain	FR	9,38%	9,72%	96,51%
IT	Wheat grain	CA	7,50%	7,77%	96,51%
IT	Wheat grain	US	3,73%	3,86%	96,51%
IT	Wheat grain	BG	2,56%	2,66%	96,51%
IT	Wheat grain	AT	2,42%	2,51%	96,51%
IT	Wheat grain	RO	2,22%	2,30%	96,51%
IT	Wheat grain	DE	2,15%	2,23%	96,51%
IT	Wheat grain	UA	2,03%	2,11%	96,51%
IT	Wheat grain	SK	1,35%	1,40%	96,51%
IT	Wheat grain	CZ	1,08%	1,12%	96,51%
IT	Wheat grain	AU	1,06%	1,10%	96,51%
IT	Wheat grain	RU	1,06%	1,10%	96,51%
JP	Wheat grain	US	38,15%	38,15%	100,00%
JP	Wheat grain	CA	30,94%	30,94%	100,00%
JP	Wheat grain	AU	15,50%	15,50%	100,00%
JP	Wheat grain	JP	15,40%	15,40%	100,00%
NL	Wheat grain	FR	48,92%	48,92%	100,00%
NL	Wheat grain	DE	21,47%	21,47%	100,00%
NL	Wheat grain	NL	19,07%	19,07%	100,00%
NL	Wheat grain	BE	3,16%	3,16%	100,00%
NL	Wheat grain	CZ	2,17%	2,17%	100,00%
NL	Wheat grain	RO	2,09%	2,09%	100,00%
NL	Wheat grain	GB	2,05%	2,05%	100,00%
NL	Wheat grain	PL	1,08%	1,08%	100,00%
PL	Wheat grain	PL	95,78%	95,78%	100,00%
PL	Wheat grain	SK	2,33%	2,33%	100,00%
PL	Wheat grain	CZ	1,89%	1,89%	100,00%
PT	Wheat grain	FR	50,92%	50,92%	100,00%
PT	Wheat grain	BG	8,45%	8,45%	100,00%
PT	Wheat grain	ES	7,14%	7,14%	100,00%
PT	Wheat grain	PT	5,74%	5,74%	100,00%
PT	Wheat grain	GB	4,04%	4,04%	100,00%
PT	Wheat grain	PL	3,81%	3,81%	100,00%
PT	Wheat grain	DK	3,56%	3,56%	100,00%
PT	Wheat grain	CA	3,27%	3,27%	100,00%
PT	Wheat grain	DE	3,27%	3,27%	100,00%
PT	Wheat grain	LT	2,17%	2,17%	100,00%
PT	Wheat grain	US	1,91%	1,91%	100,00%
PT	Wheat grain	SE	1,66%	1,66%	100,00%
PT	Wheat grain	RO	1,37%	1,37%	100,00%
PT	Wheat grain	UA	1,36%	1,36%	100,00%
PT	Wheat grain	LV	1,35%	1,35%	100,00%
RER	Wheat grain	FR	22,91%	23,33%	98,20%
RER	Wheat grain	UA	13,83%	14,08%	98,20%

RER	Wheat grain	DE	12,72%	12,95%	98,20%
RER	Wheat grain	GB	7,19%	7,32%	98,20%
RER	Wheat grain	PL	6,41%	6,53%	98,20%
RER	Wheat grain	RO	5,18%	5,27%	98,20%
RER	Wheat grain	BG	4,25%	4,32%	98,20%
RER	Wheat grain	HU	3,92%	3,99%	98,20%
RER	Wheat grain	ES	3,86%	3,93%	98,20%
RER	Wheat grain	CZ	3,75%	3,82%	98,20%
RER	Wheat grain	IT	3,48%	3,54%	98,20%
RER	Wheat grain	LT	2,58%	2,63%	98,20%
RER	Wheat grain	DK	2,37%	2,41%	98,20%
RER	Wheat grain	SE	1,75%	1,78%	98,20%
RER	Wheat grain	SK	1,54%	1,57%	98,20%
RER	Wheat grain	LV	1,29%	1,32%	98,20%
RER	Wheat grain	BY	1,18%	1,21%	98,20%
RNA	Wheat grain	US	58,26%	58,26%	100,00%
RNA	Wheat grain	CA	38,15%	38,15%	100,00%
RNA	Wheat grain	MX	3,59%	3,59%	100,00%
RO	Wheat grain	RO	91,37%	91,37%	100,00%
RO	Wheat grain	BG	3,99%	3,99%	100,00%
RO	Wheat grain	HU	3,61%	3,61%	100,00%
RO	Wheat grain	UA	1,03%	1,03%	100,00%
TH	Wheat grain	US	24,16%	24,16%	100,00%
TH	Wheat grain	AU	21,45%	21,45%	100,00%
TH	Wheat grain	UA	18,03%	18,03%	100,00%
TH	Wheat grain	AR	13,66%	13,66%	100,00%
TH	Wheat grain	CA	9,14%	9,14%	100,00%
TH	Wheat grain	RU	4,28%	4,28%	100,00%
TH	Wheat grain	RO	3,66%	3,66%	100,00%
TH	Wheat grain	BG	2,41%	2,41%	100,00%
TH	Wheat grain	IN	1,82%	1,82%	100,00%
TH	Wheat grain	PK	1,39%	1,39%	100,00%
US	Wheat grain	US	96,12%	96,12%	100,00%
US	Wheat grain	CA	3,88%	3,88%	100,00%