



Angers, 11.09.2018

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## BASE IMPACTS® DATA DOCUMENTATION

### SECTOR: AGRICULTURE

3 levels of documentation are available for the datasets in Base Impacts®:

- A **general documentation** explaining general information on the datasets and data general requirements
- A **sectorial documentation**: one document per sector describing the available datasets and their characteristics (technological representativeness, geographical representativeness), and providing the information on the datasets in a common layout. Information comes from the consultation specifications, the dataset commissioner technical proposal and the metadata
- The **datasets metadata** can be viewed directly in the datasets sheets. They include more detailed information (flow diagrams, Etc.)

**This document is the sectorial documentation for agriculture production processes.**

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# A. PRESENTATION OF THE AGRICULTURAL PRODUCT DATASETS

## 1. List of available datasets

Base Impacts® only includes datasets for agriculture production processes coming from the Agribalyse program (mode 2).

This program, developed by ADEME, aims at developing LCI for agriculture processes for France only. Therefore these datasets are really consistent and homogeneous.

No other datasets from any other country of production has been studied as the specific rules of modeling would have been different.

The following datasets are available:

Product	Geographical representativity	Type of dataset
Beef calf, conventional, fattening system, calves from lowland milk system, at farm gate	France	LCI result
Beef cattle, national average, at farm gate	France	LCI result
Broiler, national average, at farm gate	France	LCI result
Cow milk, national average, at farm gate	France	LCI result
Cull hen, conventional, national average, at farm gate	France	LCI result
Cull rabbit, conventional, in cage, at farm gate	France	LCI result
Cull sow, conventional, national average, at farm gate	France	LCI result
Cull sow, Label Rouge, outdoor system, at farm gate	France	LCI result
Cull sow, Label Rouge, pig with run system, at farm gate	France	LCI result
Cull sow, organic, at farm gate	France	LCI result
Duck for roasting, conventional, at farm gate	France	LCI result
Egg, national average, at farm gate	France	LCI result
Fattening duck, conventional, at farm gate	France	LCI result
Large trout, 2-4kg, conventional, at farm gate	France	LCI result
Pig, conventional, national average, at farm gate	France	LCI result
Pig, Label Rouge, outdoor system, at farm gate	France	LCI result
Pig, Label Rouge, pig with run system, at farm gate	France	LCI result
Pig, organic, at farm gate	France	LCI result
Rabbit, conventional, in cage, at farm gate	France	LCI result
Sea bass or sea bream, 200-500g, conventional, in cage, at farm gate	France	LCI result
Small trout, 250-350g, conventional, at farm gate	France	LCI result
Turkey, national average, at farm gate	France	LCI result

Table 1 : Available datasets – Animal products

Product	Geographical representativity	Type of dataset
Alfalfa, conventional, national average, at farm gate	France	LCI result
Apple non scab-resistant, conventional, national average, at orchard	France	LCI result
Apple scab-tolerant, conventional, national average, at orchard	France	LCI result
Apple, conventional, national average, at orchard	France	LCI result
Apple, organic, national average, at orchard	France	LCI result
Apple, production mix, national average, at orchard	France	LCI result
Barley, conventional, malting quality, national average, at farm gate	France	LCI result
Carrot, conventional, national average, at farm gate	France	LCI result
Carrot, organic, Lower Normandy, at farm gate	France	LCI result
Cider apple, conventional, national average, at orchard	France	LCI result
Clementine, export quality, Souss, at orchard	France	LCI result
Cocoa, conventional, Cabruca, at orchard	France	LCI result
Coffee bean (Robusta), depulped, Brazil, at farm gate	France	LCI result
Durum wheat grain, conventional, national average, at farm gate	France	LCI result
Faba beans, conventional, national average, at farm gate	France	LCI result
Forage barley, conventional, national average, at farm gate	France	LCI result
Grain maize, conventional, 28% moisture, national average, at farm gate	France	LCI result
Jasmine rice, national average, at farm gate	France	LCI result
Mango, conventional, Val de San Francisco, at orchard	France	LCI result
Oil palm fruit, conventional, Sumatra, at farm gate	France	LCI result
Peach, conventional, national average, at orchard	France	LCI result
Peach, organic, national average, at orchard	France	LCI result
Peach, production mix, national average, at orchard	France	LCI result
Potted shrub, national average, at production site	France	LCI result
Rapeseed, conventional, 9% moisture, national average, at farm gate	France	LCI result
Rose (cut flower), production mix, national average, at greenhouse	France	LCI result
Silage maize, conventional, national average, at farm gate	France	LCI result
Soft wheat grain, conventional, national average, at farm gate	France	LCI result
Spring pea, conventional, 15% moisture, at farm gate	France	LCI result
Starch potato, conventional, national average, at farm gate	France	LCI result
Sugar beet roots, conventional, national average, at farm gate	France	LCI result
Sunflower, conventional, 9% moisture, national average, at farm gate	France	LCI result

Product	Geographical representativity	Type of dataset
Tomato, conventional, greenhouse production, national average, at greenhouse	France	LCI result
Tomato, conventional, soil based, non-heated greenhouse, at greenhouse	France	LCI result
Tomato, organic, greenhouse production, national average, at greenhouse	France	LCI result
Tomato, production mix, greenhouse production, national average, at greenhouse	France	LCI result
Triticale grain, conventional, national average, at farm gate	France	LCI result
Ware potato, conventional, variety mix, national average, at farm gate	France	LCI result

Table 2 : Available datasets – Plant products

## 2. Structure of available datasets

All agricultural products datasets are LCI results.

### B. SCOPE OF THE DATASETS

The scope of analysis is cradle-to-gate. It ends at field or farm gate. It includes raw material production, agricultural engines, greenhouses when necessary... Thus, downstream processes are not included in LCI:

- packaging and distribution steps are not included;
- transformation processes are covered by another program (Acyvia).

The geographical scope is France.

See specific documentation available : <http://www.ademe.fr/en/expertise/alternative-approaches-to-production/agribalyse-program>

### C. DATA SOURCES AND QUALITY

Processes of agriculture production processes can not only be modeled through specific data collection. They also need some specific agronomy models to describe nitrogen cycle, carbon cycle and pesticides degradation. In order to get good datasets quality, the most consensual models have been used and/or built.

In case of future development of datasets for other countries, the same models should be used to get the correct consistency of the database.

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## D. CRITICAL REVIEW

An external critical review was carried out for the AGRIBALYSE® program. This review concentrated on quality control.

Quality control was carried out in 3 phases: internal verification, quality control of the data describing the production systems and quality controls on the results.

- **Production system data entered the data collection module:** 21 professional organizations were consulted

Organization to which experts belonged			
Agrial	Farming cooperative	Chambre Régionale d'Agriculture de Bretagne	Agricultural development
Agrocampus Ouest	Educational and research institute	Chambre Régionale d'Agriculture des Pays-de-la-Loire	Agricultural development
Agro-Pithiviers	Farming cooperative	ESA Angers	Education
Agro-Transfert Picardie	Technology transfer	IDELE	Technical Institute
Axereal	Farming cooperative	INRA	Research Institute
Biomar	Feed manufacturer	InVivo	Farming cooperative
Chambre d'Agriculture 44	Agricultural development	IRBAB (Institut Royal Belge pour l'Amélioration de la Betterave)	Technical Institute
Chambre d'Agriculture 53	Agricultural development	ITAB	Technical Institute
Chambre d'Agriculture 66	Agricultural development	Lycée de Guérande	Education
Coop de France	Farming cooperative	SILEBAN	Regional experimental station

- **The direct emissions calculation models and LCI and LCIA results:** the experts were technical institutes involved in the program where reviewers of data quality. The quality control considered the relevance of the results of the LCIA and LCA and the parameters for the direct emissions calculation models. This was done in several

stages: verifying the calculations, comparing the internal references and the results in the works cited in the bibliography.

The procedure ended by pooling the comments at a working seminar and by the Technical Institutes drawing up an evaluation report. This report is included in the report “AGRIBALYSE®: Assessment and lessons for the future” (Colomb et al, 2013).

This level of critical review corresponds to Full compliance ILCD level.

Each dataset has its own assessment based on the 6 different criteria in accordance with ILCD.

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