



LA SEMOLA BIO

ENVIRONMENTAL PRODUCT DECLARATION OF ORGANIC DURUM WHEAT SEMOLINA



The EPD should provide updated information and may require to be updated if the condition changes. The validity stated is, therefore, subject to ongoing registration and publication on www.environdec.com.
The present environmental declaration has been redacted in compliance with ISO 14025:2006.

CPC CODE

2311 - Wheat and
meslin flour

PUBLICATION DATE

19/02/2015

REVISION DATE

1/09/2021, revision 3

VALID UNTIL

10/09/2026

REGISTRATION NUMBER

S-P-00665

PROGRAMME

The International
EPD® System
www.environdec.com

PROGRAMME OPERATOR

EPD International AB

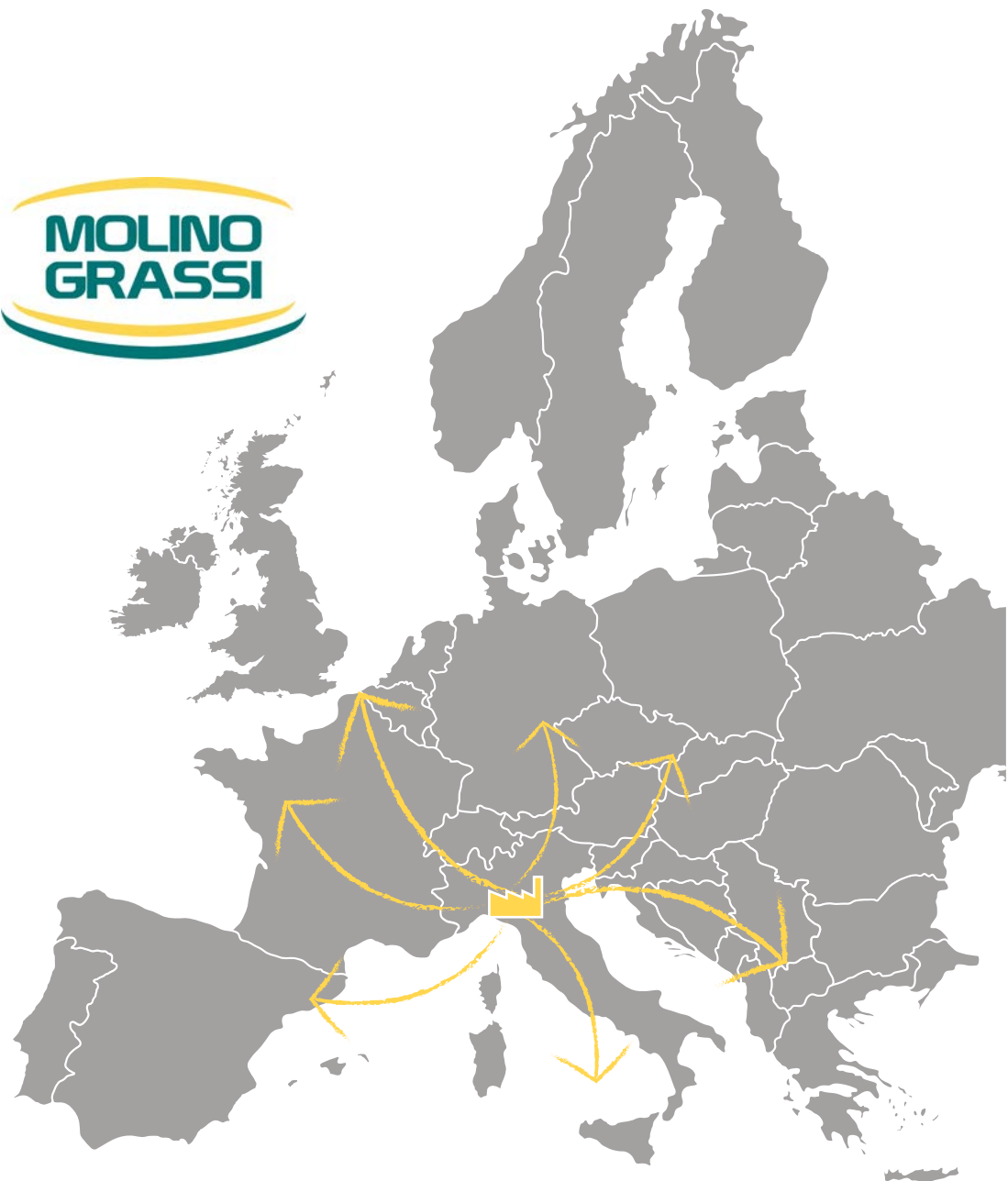
1. THE COMPANY

Established in 1934, Molino Grassi is the story of a family company. Three generations, from the founder to his grandchildren, who over the years have created, developed and given continuity to an ambitious project: to become leaders in soft and durum wheat processing, focusing on quality flour and semolina creation. The company has its headquarters in Parma, heart of the so-called Food Valley in the centre of Emilia Romagna, the most important cereal-growing region of Northern Italy, where it employs around 50 staff.

For several years now the company has established a new type of relation with the agricultural world, developing a more collaborative and less competitive productive thread. This approach has allowed Molino Grassi to become an important benchmark in testing new

typologies and variety products: the organic range, the QB range, the ancient grains' world, the baby food range and the Kronos® durum wheat.

In 1996 Molino Grassi obtained ISO 9001 certification of its quality system. In 2011 the company achieved the goal of BRC (British Retailer Consortium) and IFS (International Food Standard), the two standard certifications suggested by mass retailers to guarantee the food quality and safety to end consumers. Since 1994, year of the company's first organic certification according to Re. CEE 2092/91, along time it has adapted its production chains to the different organic international standards.



2. THE PRODUCT

Semola Bio is produced in the Molino Grassi plant in Fraore (PR) starting from organic durum wheat. It is sold in the following format:

- » 1 kg and 5 kg paper bags;
- » 25 kg paper sack;
- » PE Big bag 1000 kg.

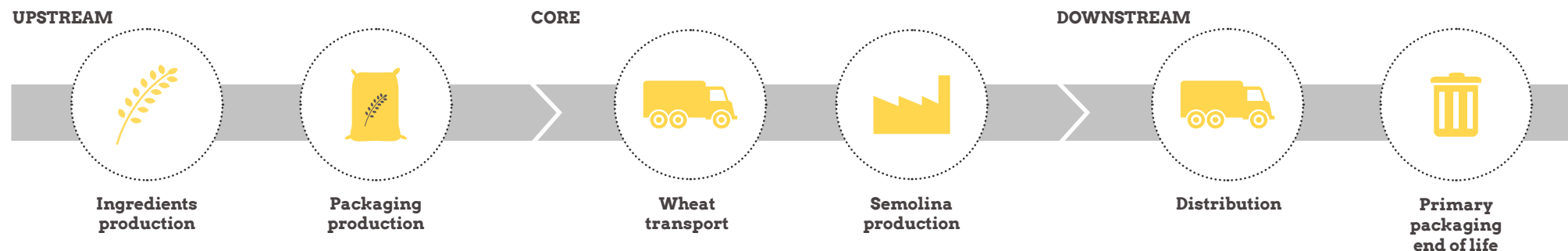
Semola Bio is particularly suitable for the production of dry pasta, fresh pasta and bread.

Below the nutritional facts per 100 g of product are reported.

NUTRITIONAL FACTS per 100 g of product	
Energy value	1440 / 340 kJ / kcal
Proteins	10,40 g
Carbohydrates	69,86 g
of which sugar	1,62 g
Fats	1,36 g
of which saturated	0,30 g
Fibres	3,10 g
Salt	0,003 g



3. THE CALCULATION OF ENVIRONMENTAL PERFORMANCE



L Environmental performance was evaluated through the Life Cycle Assessment (LCA) methodology, taking into account the whole supply chain, from the cultivation of raw materials to the distribution of the final product. The study was conducted according to the Product Category Rules 2013:04 Grain mill products. The contribution of generic data represents less than the 10% of the total environmental impact.

DECLARED UNIT

Results are referred to 1 kg of product and the related packaging

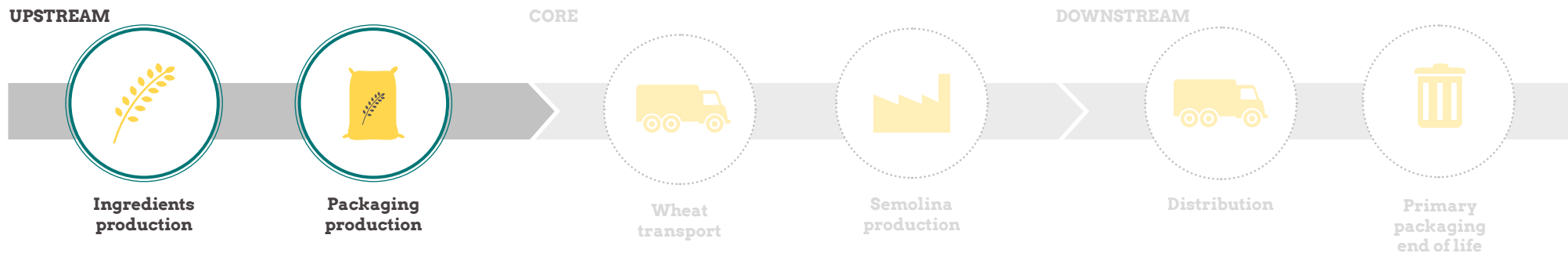
SYSTEM BOUNDARIES

The analysed system includes wheat cultivation, packaging production and production and packaging of flour at the Fraore Plant. It is not included the use phase of flour, since it could be used, with other ingredients, for different productions and with different technologies. Information about the end of life of packaging are reported in page 5.

DATA QUALITY AND CUT-OFF

Data quality and cut-off rules follow the reference PCR indications.

4. UPSTREAM



Data about wheat cultivation were collected from a sample of farms representative of the main areas where it is cultivated and the most common typologies of farms.



Organic wheat semolina is packaged in 1 kg and 5 kg paper bags, in 25 kg paper sacks and in 1000 kg plastic big bags. In the section 7 of this EPD only results for the product in 1 kg paper bag are reported (worst case).

5. CORE

UPSTREAM



Ingredients
production



Packaging
production

CORE



Wheat
transport



Semolina pro-
duction

DOWNSTREAM



Distribution



primary
packaging
end of life

Average distance between wheat cultivation area and Molino Grassi mill has been calculated considering a ewighted average on km and amount of wheat tranpsorted.

Data about milling and packaging of semolina were collected from the Fraore (PR) plant.. They refers to 2020 production.



Data about energy consumption, water consumption and waste generation were collected. They have been allocated on total, in compliance with the reference PCR.

The electricity consumed in the plant is entirely composed of energy from hydroelectric sources.

6. DOWNSTREAM

UPSTREAM



Ingredients
production

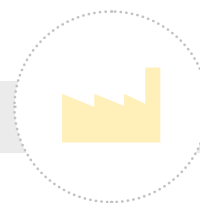


packaging
production

CORE



Wheat
transport



Semolina
production

DOWNSTREAM



Distribution

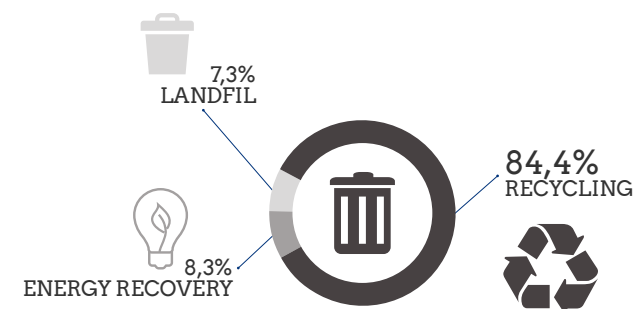


Primary
packaging
end of life

Organic semolina is distributed in Italy and in several European and extra-European countries. Environmental impacts of distribution were calculated taking into account the distances and the amounts delivered.










The environmental impacts related to primary packaging end of life were calculated considering the average waste scenario generated in the major markets.










7. ENVIRONMENTAL PERFORMANCE

data referred to 1 kg of product

 POTENTIAL ENVIRONMENTAL IMPACT		UNIT	UPSTREAM		CORE		DOWNSTREAM		TOTAL
			 Ingredients production	 Packaging production	 Wheat transport	 Flour production	 Distribution	 Primary packaging end of life	
Global warming potential (GWP)	Fossil	kg CO ₂ eq.	1,34E-01	9,72E-03	6,86E-02	3,40E-04	8,70E-02	1,10E-05	2,99E-01
	Biogenic	kg CO ₂ eq.	7,90E-04	5,25E-05	3,57E-06	7,87E-05	4,56E-06	8,95E-04	1,82E-03
	Land use and land transformation	kg CO ₂ eq.	4,53E-06	2,27E-05	5,80E-07	2,79E-08	7,43E-07	8,25E-09	2,86E-05
	TOTAL	kg CO₂ eq.	1,35E-01	9,80E-03	6,86E-02	4,19E-04	8,70E-02	9,06E-04	3,01E-01
Acidification potential (AP)		kg SO ₂ eq.	5,96E-03	4,54E-05	2,99E-04	3,88E-07	3,82E-04	2,74E-07	6,69E-03
Eutrophication potential (EP)		kg PO ₄ ³⁻ eq.	2,98E-03	1,09E-05	4,63E-05	1,64E-06	5,91E-05	5,34E-07	3,10E-03
Photochemical Oxidant Formation Potential (POFP)		kg NMVOC eq.	1,39E-03	3,78E-05	3,49E-04	2,01E-07	4,46E-04	6,08E-07	2,23E-03
Abiotic depletion potential – Elements		kg Sb eq.	4,84E-08	1,96E-08	4,08E-09	7,34E-11	5,20E-09	2,41E-11	7,74E-08
Abiotic depletion potential – Fossil fuels		MJ, net calorific value	1,36E+00	1,59E-01	9,61E-01	3,09E-04	1,22E+00	1,22E-04	3,70E+00
Water scarcity potential		m ³ eq.	4,85E-01	1,64E-02	2,38E-03	1,33E-01	-2,77E-04	4,78E-06	6,36E-01







7. ENVIRONMENTAL PERFORMANCE

data referred to 1 kg of product

 USE OF RESOURCES		UNIT	UPSTREAM		CORE		DOWNSTREAM		TOTAL
			 Ingredients production	 Packaging production	 Wheat transport	 Flour production	 Distribution	 Primary packaging end of life	
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	2,34E-02	2,37E-01	1,38E-03	3,76E-01	1,75E-03	3,26E-05	6,39E-01
	Used as raw materials	MJ, net calorific value	0,00E+00	1,38E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,38E-01
	TOTAL	MJ, net calorific value	2,34E-02	3,75E-01	1,38E-03	3,76E-01	1,75E-03	3,26E-05	7,78E-01
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	1,40E+00	1,97E-01	9,63E-01	4,20E-04	1,22E+00	1,63E-04	3,78E+00
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	TOTAL	MJ, net calorific value	1,40E+00	1,97E-01	9,63E-01	4,20E-04	1,22E+00	1,63E-04	3,78E+00
Secondary material		kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Renewable secondary fuels		MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non-renewable secondary fuels		MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Net use of fresh water		m ³	1,21E-02	4,98E-04	8,00E-05	2,91E-03	2,47E-05	3,52E-07	1,56E-02

7. ENVIRONMENTAL PERFORMANCE

data referred to 1 kg of product

 WASTE PRODUCTION AND OUTPUT FLOWS		UNIT	UPSTREAM		CORE		DOWNSTREAM		TOTAL
			 Ingredients production	 Packaging production	 Wheat transport	 Flour production	 Distribution	 Primary packaging end of life	
Waste production	Hazardous waste disposed	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	Non-hazardous waste disposed	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	Radioactive waste disposed	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Output flows	Components for reuse	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	Material for recycling	kg	0,00E+00	0,00E+00	0,00E+00	4,98E-04	0,00E+00	7,59E-03	8,09E-03
	Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,51E-04	7,51E-04
	Exported energy, electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,30E-04	3,30E-04
	Exported energy, thermal	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,90E-04	6,90E-04

8. DIFFERENCES VERSUS PREVIOUS VERSION

The differences versus previous EPD versions are due mainly to the update:

- of wheat production yields
- of the energy mix of the plant
- of the emission factors related to the use of fertilizers

(following the update of the reference PCR)

- of databases
- of the characterization factors of the indicators (following the update of the EPD System guidelines)

9. ADDITIONAL INFORMATION

Environmental declarations within the same product category but from different programme operators may be not comparable.

For further information: www.environdec.com

REFERENCES

- Ecoinvent database (www.ecoinvent.ch)
- International EPD System, General Programme Instructions (EPD), ver. 3.01 of 18/09/2019;
- ISO 14040/14044:2021, ISO series on Life Cycle Assessment (Valutazione del ciclo di vita) www.iso.org
- Molino Grassi, Life Cycle Assessment di Farina Bio, Semola Bio e semola Kronos, revisione 01/09/2021
- Product Category Rules for Grain Mill Products 2013:04 ver. 3.0 of 30/11/2020
- SimaPro versione 9.1 (www.pre.nl)

10. INFORMATIONS

PROGRAMME OPERATOR

EPD Internationa AB. Box 210 60.
SE-100 31 Stockholm Sweden
Email: info@environdec.com

PRODUCT CATEGORY RULES (PCR)

Grain Mill Products 2013:04 ver.
3.0 of 30/11/2020. UN CPC 231

PCR REVIEW

conducted by: Technical
Committee of the International
EPD® system
Chair: Lars-Gunnar Lindfors
Contact via info@environtec.com

INDIPENDENT VERIFICATION

Indipendent third-party
verification of the declaration and
data, according to ISO 14025:2006:
☒ EPD verification
☐ EPD process certification

THIRD PARTY VERIFICATION



CCPB S.r.l.
Viale Angelo Masini 36
Bologna, 40126

Accreditation number: 043B

TECHNICAL REPORT

All detailed hypotheses of the
study are reported in the LCA
report on the production of
organic soft wheat flour, organic
durum wheat semolina and
Kronos durum wheat semolina.

*EPD declaration, within the same product
category but from different systems or
programs, may not be compatible.*

Molino Grassi is the sole owner
and has sole responsibility for the
contents of the EPD

CONTACTS

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Manager

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PROCEDURE FOR FOLLOW-UP OF DATA

During EPD validity involves third
party verifier

☒ yes ☐ no

11. GLOSSARY

ACIDIFICATION POTENTIAL – AP

Acidification is a phenomenon for which precipitation is unusually acidic, meaning that it has substandard levels of pH. It can have harmful effects on plants, aquatic animals and infrastructure. Acid rain is caused by emissions of SO₂, NO_x and NH₃. The acidification potential is measured in mass of sulfur dioxide equivalent (SO₂-eq).

EUTROPHICATION POTENTIAL – EP

Eutrophication is an abnormal proliferation of vegetation in the aquatic ecosystems caused by the addition of nutrients into rivers, lakes or ocean, which determinates a lack of oxygen. The eutrophication potential is mainly influenced by emission into water of phosphates and nitrates. It is expressed in mass of PO₄⁻equivalent.

PHOTOCHEMICAL OXIDANT FORMATION POTENTIAL - POFP

Production of compounds which, by the action of light, are able to promote an oxidation reaction that leads to the production of ozone in the troposphere. The indicator mainly includes VOC (volatile organic compounds) and is expressed in grams of VOC equivalent (g NMVOC - equivalent).

GLOBAL WARMING POTENTIAL – GWP

Global warming potential of a product (also called Carbon Footprint) is the total amount of greenhouse gases produced along the entire life cycle. It is expressed in equivalent mass of carbon dioxide (CO₂-eq). In agriculture a significant contribution is given by the emission of nitrous oxide (N₂O) due to the fertilizers use.