

ZERO WASTE BULK FOODS

Carbon footprint of top 10 best-selling items on website

ZWBF's best sellers (<https://zerowastebulkfoods.co.uk/collections/best-sellers-1>):

1. British Organic Wholegrain Spelt Fusilli - Organic
2. Oats, Jumbo - Organic
3. Dates Deglet Nour - Organic, Pitted
4. Pine Nut Kernels - Organic
5. 55% Dark Chocolate Drinking Flakes - Organic, Fairtrade
6. Omega Four Seed Mix - Organic
7. English Breakfast Loose Leaf Tea - Organic
8. Sunflower Seed Kernels - Organic
9. Granola Clusters - Organic, Vegan
10. Hemp Seeds, Hulled – Organic

Sources

Several sources were consulted to work out the footprint of these items, as there is yet not a comprehensive, inclusive source for all ingredients.

Systematic review of greenhouse gas emissions for different fresh food categories (2017)

This source was chosen as the principal one for this case as it is a peer-reviewed scientific paper that revised 100+ life cycle assessment (LCA) studies. The report can be found [here](#) and is attached to the email I sent.

- System boundaries: from production to delivery to regional distribution centre
- Limitations: the review does not include organic ingredients, it's quite generic in terms of categories and uses world averages in its calculations.

Agribalyse database

AGRIBALYSE® provides reference data on the environmental impacts of agricultural and food products through a database built according to the [Life Cycle Assessment \(LCA\) methodology](#). This was used as the secondary source for this research.

- It's part of ADEME, the French Environment and Energy Management Agency. It is trusted by many other carbon calculators for food (such as MyEmissions below).
- They include food that can be found directly in supermarkets, hence some organic and ethical ingredients can be found there.

MyEmissions

This is a free food carbon footprint calculator for businesses. The website can be found [here](#).

- System boundaries: farm to store (including at least the emissions from farming, processing, packaging, and transport).
- All data comes from life cycle assessments published in peer-reviewed journals, or recognised databases like [Ecoinvent](#) and [Agribalyse](#).



- Limitations: this source doesn't include organic ingredients and it can also be quite generic.

TESCO's Product Carbon Footprint Summary (2012)

This report was described in the systematic review as the most comprehensive listing of carbon footprint for foods done by a company. It includes a high number of products sold by Tesco, some of them being organic, fair-trade, etc.

- System boundaries: cradle to grave. From raw materials to disposal of the product.

Results

This table shows the footprints of all items according to our criteria for most reliable sources.

Item	Ingredients	Weight (g)	Footprint (kg CO2e)
British Organic Wholegrain Spelt Fusilli - Organic	Stoneground wholegrain spelt flour	1000	0.53
Oats, Jumbo - Organic	100% organic jumbo oats	1000	0.44
Dates Deglet Nour - Organic, Pitted	100% Organic Deglet Nour pitted dates	1000	0.32
Pine Nut Kernels - Organic	Organic Pine Nutkernels	1000	1.42
55% Dark Chocolate Drinking Flakes - Organic, Fairtrade	Dark chocolate containing 55% cocoa solids minimum (cocoa mass, sugar, cocoa butter, vanilla powder)	1000	17.11
Omega Four Seed Mix - Organic	Organic Pumpkin Seeds (36.5%)	365	2.77485
	Organic Sunflower Seeds (36.5%)	365	
	Organic Golden Linseed (18%)	180	
	Organic Sesame Seeds (9%)	90	
English Breakfast Loose Leaf Tea - Organic	Organic black tea - Camellia Sinensis	1000	0.605
Sunflower Seed Kernels - Organic	Organic sunflower seeds	1000	1.41
Granola Clusters - Organic, Vegan	Organic: Wheat Flakes, Beet Sugar Syrup (15%), Oat Flakes - coarse, Oatmeal, Sunflower Oil, Sunflower Seeds, Grated Coconut, Almond Flour, Corn Glucose Powder. Not organic: Sea Salt.	1000	3.56
Hemp Seeds, Hulled - Organic	100% organic hemp seeds	1000	1.46

Master table

This table was used to log all the figures from the different sources and calculate totals

Item	Ingredients	Origin	Weight	Systematic review (2017)	Agribalyse database	MyEmissions	Tesco review	Final figure (kg CO2e)	Organic?
British Organic Wholegrain Spelt Fusilli - Organic	Stoneground wholegrain spelt flour	UK	1000	0.53	-	-	3.2	0.53	No
Oats, Jumbo - Organic	100% organic jumbo oats	Ireland	1000	0.44	1.16	0.79	-	0.44	No
Dates Deglet Nour - Organic, Pitted	100% Organic Deglet Nour pitted dates	Tunisia	1000	0.32	2.76	2.1	-	0.32	No
Pine Nut Kernels - Organic	Organic Pine Nutkernels	China	1000	1.42	4.16	-	-	1.42	No
55% Dark Chocolate Drinking Flakes - Organic, Fairtrade	Dark chocolate containing 55% cocoa solids minimum (cocoa mass, sugar, cocoa butter, vanilla powder)	Dominican Republic	1000	-	17.11	-	-	17.11	Yes
Omega Four Seed Mix - Organic	Organic Pumpkin Seeds (36.5%)	UK	365	-	-	1.533	-	2.77485*	No
	Organic Sunflower Seeds (36.5%)		365	0.51465	-	0.31	-		No
	Organic Golden Linseed (18%)		180	-	0.648	-	-		No
	Organic Sesame Seeds (9%)		90	0.0792	-	0.378	-		No
English Breakfast Loose Leaf Tea - Organic	Organic black tea - Camellia Sinensis	Putarjhora tea garden (between Northeast India and Bhutan)	1000	-	-	0.605	-	0.605	No
Sunflower Seed Kernels - Organic	Organic sunflower seeds	Hungary	1000	1.41	3.25	0.848	-	1.41	No
Granola Clusters - Organic, Vegan	Organic: Wheat Flakes, Beet Sugar Syrup (15%), Oat Flakes - coarse, Oatmeal, Sunflower Oil, Sunflower Seeds, Grated Coconut, Almond Flour, Corn Glucose Powder. Not organic: Sea Salt.	The Netherlands	1000	-	3.56 (mixed cereals)	4.016	-	3.56**	No
Hemp Seeds, Hulled - Organic	100% organic hemp seeds	France	1000	1.46	-	-	-	1.46	No

*This is a sum of all the highlighted figures

**There is only one figure as the percentages of each ingredient were not known. This should serve to illustrate the average footprint of mixed cereals, muesli, or granola.